Philippines (Republic). Economic Survey Commission.

PHILIPPINE AGRICULTURAL AND INDUSTRIAL DEVELOPMENT PROGRAM

REVISED, 1950

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Manila, Philippines
August 11, 1950

HIS EXCELLENCY, ELPIDIO QUIRINO
President of the Philippines
Manila

Excellency:

We have the honor to submit herewith the report of the Economic Survey Commission which you created to "re-examine completely the program of rehabilitation and development in order to find ways and means whereby the national economy may be developed on bases responsive to the immediate needs of the country and later to the new conditions that will result from the gradual withdrawal of trade preferences as guaranteed in the Executive Trade Agreement with the United States."

The Commission endeavored, with the help of its staff, to make as complete a survey as was possible within the time given to it, of the present available resources — financial, economic, industrial, agricultural, mineral, and human — in order to arrive at a realistic formulation of what can be done with the tools and potentialities at hand and determine the magnitude of assistance required to lay the foundation of economic stability within the shortest practicable time.

The Commission has revised and made up-to-date the economic development program of the government with a view to fulfilling the objectives outlined in its terms of reference as follows: "(1) making the country as self-sufficient as it can be in the prime and essential necessities of life, such as food, clothing, shelter, transportation and communication services, etc.; (2) accelerating the production of dollar-producing exports, so as to achieve within the shortest possible time a stable balance of payments notwithstanding the imminent reduction of dollar receipts from the United States commencing this year; (3) establishing an economy which can withstand the gradual cessation of preferential treatment given to us in the American market under the provisions of the trade agreement with the United States; and (4) expanding the productive capacity of our people, thereby increasing their earning power and improving their standard of living."

The Commission has likewise made a study of the financial position of the Government and submitted a separate report thereon recommending measures which are considered necessary to meet the most pressing *problems of the government in fiscal year 1951. These measures will pave the way for the implementation of a more comprehensive fiscal program which the Commission will be in a position to consider after the report of the Government Reorganization Commission has been submitted.*

The Commission is grateful to its assistants and staff members for the generous and unstinted assistance that it received from them and to the officials and employees of various government departments, instrumentalitics and private institutions who have contributed invaluable data and information on their respective fields.

We wish to assure your Excellency that we and our staff deeply appreciate the privilege you have given us to contribute to the massive effort of ensuring the future generations of our country the enjoyment of a higher level of welfare in a constantly expanding and growing economy.

Respectfully yours,

(Sgd.) JOSE YULO
Chairman

(Sgd.) PIO PEDROSA
Member

(Sgd.) BIENVENIDO M. GONZALEZ
Member

(Sgd.) M. CUADERNO. SR.
Member

(Sgd.) FILEMON G. RODRIGUEZ
Member

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CHAPTER I

A. Introduction

Interest in over-all economic planning in the Philippines dates back to the time when the Philippine Economic Association in 1934 undertook a critical examination of the economic provisions of the Hare-Hawes-Cutting Bill granting independence to the Philippines. Because of the impending change in the political status of their country, the need of adjusting its economy to the future application of American tariffs on Philippine exports became the principal concern of Philippine authorities. Free trade with the United States under the Payne-Aldrich Tariff Law of 1909 developed for the Philippines a typically colonial economy specialized in the production of primary export crops and highly sensitive to fluctuations in their prices. In the prewar year of 1940, 82.8% of all Philippine merchandise exports went to the United States, of which 64.4% were heavily dependent on American tariff protection. The trade relationship between the two countries resulted over the years in the Philippines developing industries which could sell their products in the American market at a substantial advantage over competing items originating elsewhere and the high export income made possible in turn the importation from the United States and other countries of almost all the country's requirements for manufactured articles and food.

Recognizing the need for a gradual adjustment in the Philippine economy, a Joint Preparatory Committee on Philippine Affairs was created by mutual agreement between the Presidents of the United States and of the Philippine Commonwealth in 1937. The outbreak of the war in the Pacific in 1941 interfered with the process of implementing the recommendations submitted by this Committee the following year.

At war's end the United States Congress sought to alleviate some of the difficulties due to the heavy destruction by approving in 1946 the Philippine Rehabilitation Act and the Philippine Trade Act. These laws were intended to serve as stop-gap measures to tide the Philippines over its immediate situation which in 1946, when it became independent was well nigh desperate in some respects.

In order to determine what economic adjustments would be necessary to enable the country to stand on its feet after the termination of the benefits and privileges afforded by the Philippine Rehabilitation Act and the Philippine Trade Act, a Joint Philippine-American Finance Commission was formed late in 1946. In line with the specific proposals of this

Commission which would enable the Phliippines to achieve economic independence, the Government through a variety of measures made major economic and financial structural adjustments. In 1948 the Congress of the Philippines approved Republic Act No. 265 replacing the rigid 100 percent reserve currency system which had been in effect since 1903 with a modern flexible system in which monetary authority and responsibility were united in a central bank. A comprehensive revisicn of the general banking laws was made as a complementary measure to the Central Bank Act. An act which authorized the Secretary of Finance, with the approval of the President, to sell government securities to meet authorized Government expenditures was also approved (Rep. Act. No. 245). A revision of the tax laws to increase the rates on luxury and nonessential goods was undertaken. An import control law designed to conserve foreign exchange resources for economic development was approved in June 1948, and put into effect in January, 1949. An integrated rehabilitation and development program which included projects undertaken since the end of the war was drawn up in 1948, passed upon by the National Economic Council and approved by the President in the latter part of that year. Extraordinary advances of development funds in line with the recommendations of the Philippine-American Finance Commission, were made by the Central Bank to meet the initial requirements of this program.

B. Prewar Pattern of the Economy

The rapid commercial development which took place during the period of American sovereignty over the Philippines did not give rise to a corresponding development of processing and manufacturing activities. Primary and extractive activities continued to dominate the economy in a more or less primitive form except in some export products.

Prior to the outbreak of the war, about 74 percent of the labor force were engaged in primary industries (agriculture, fishing, forestry and hunting), about 10 percent in secondary industries (manufacturing and mining), and 16 percent in tertiary industries (trade, professions, clerical work and service industries). Two-thirds of the manufacturing activities consisted of handicrafts.

Of the gross national product estimated at ₱1.16 billion in 1938, ₱654 million or about 56 percent came from primary industries including agricultural crops, livestock and poultry, forest and fisheries together with the secondary and tertiary industries based on them such as processing, manufacturing and marketing; about 10 percent was contributed by mining and manufacturing not based on any primary industry; and the remaining 34 percent was due to services, which include trade, transportation, the professions, government, personal services, etc.

A breakdown of the 56 percent of gross national product attributable to the primary and their corollary secondary and tertiary industries show that 32 percent is due to primary production and 24 percent, to their corollary secondary and tertiary industries.[1] Thus, while employing 74 percent of the total labor force, agriculture and other primary industries contributed only 32 percent of the gross national product; tertiary industries which absorbed 16 percent of the labor force accounted for 35 percent; and secondary industries, although absorbing only 10 percent of the labor force, produced about 33 percent of the gross national product. Had the ratio of capital to labor been higher in this sector, the proportion of its contribution to the gross national product would be much greater.

Income per worker is obviously lowest in the primary industries. Farm wages ranged from ₱.35 to ₱.70, averaging about ₱.50 per day. On the other hand, wages of unskilled workers in industry averaged about ₱1 per day, while the more skilled received an average of about ₱2 per day.

Standards of living of farm workers and city laborers were at bare subsistence levels. While findings vary regarding the total yearly value of goods consumed by an average family of 5 persons, there was almost complete agreement as to the quantity and quality of this consumption. Food constituted the biggest item (from 50 to 70 percent) of expenditures, and rice accounted for 30 to 50 percent of total food expenses. With the concentration on cereals and fish, the diet of the average peasant or city worker was deficient in almost all the nutrients which experts consider necessary for healtful living.

The low incomes of workers in the farm were caused mainly by low labor productivity. This in turn was due to various factors, chief among which were:

a. Small size of farms
b. Scarcity (or absence) of capital equipment and primitive farm methods
c. Archaic land tenure practices

More than 70 per cent of the farms had an area of less than 3 hectares each. Only a little over 1 percent of the farms had areas of 20

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[1] The farm values of the following primary industries were:

Agricultural Crops	₱ 261.8 million
Livestock & Poultry	19.7 "
Fisheries	41.6 "
Forestry	52.0 "
	₱ 375.1 "

SOURCE: Yearbook of Philippine Statistics — 1946, except for livestock and poultry, which was taken from the national income estimates (See appendices).

hectares and over. Because of the poverty of the peasantry, and the size of the farms cultivated, the old primitive equipment consisting of the plow, the harrow, and the carabao continued as the principal tools of the peasant. The absence of mechanization, except in a few large haciendas, lowered the worker's productivity and status. It has been estimated that the value of the carabao's labor was at least as high as the value of the peasant's labor, estimates for both being at about 10 centavos per hour. The inadequacy of experiment stations, demonstration farms, and agricultural agents made the task of introducing and propagating modern scientific methods of crop rotation, soil fertilization, seed selection, and other techniques difficult. This had inhibited the growth of productivity of the peasant.

Of the total farms numbering 1,634,726, about one-half were cultivated by owners. The remainder were cultivated by part owners and by tenants. The large number of tenants in the economy meant a greater number of persons dependent on the same farm. In some haciendas, for example, three sets of persons made a living out of the same land — the actual cultivator, the lessee, and the owner. The actual cultivator was further assisted by farm laborers including members of his family, thus adding a fourth dependent group to the list. In places where this kind of tenancy system prevailed, incomes of cultivators were lower than the average farm income.

With the exception of rice, corn, and root crops, practically all major crops of the economy were produced for export rather than for domestic consumption. Proceeds from exports amounted to over ₱311 million in 1940, representing about ⅓ of the total national income.

Of the total value of processed agricultural crops produced in 1938, amounting to about ₱482 million, subsistence crops consisting of rice, corn, and root crops accounted for about 50 percent, and export crops for the remainder. The ones with the greatest value among the latter were: sugar (₱112 million), copra and coconut products (₱69 million), abaca and cordage (₱27 million), and tobacco and products (₱23 million).

The importance of export industries to the economy is shown further by the number of people dependent on them for a living. Of the total population of about 16 million in 1939, six million were distributed among the export industries as follows:

Sugar	1,600,000
Copra and coconut products	4,000,000
Abaca and cordage	500,000
Tobacco and products	100,000
Other export products (about)	100,000
Total No. of persons dependent	6,300,000

The prominence of export industries in the production pattern of the economy resulted from the preferential treatment of Philippine products in the United States market which absorbed about 82 percent of Philippine exports. While this encouraged a rapid rate of growth in the preferred industries it also precipitated a lopsidedness in the country's economc development stimulating the flow of investment principally into a few specialized crops, some of which could not compete successfully in a free market. The failure of domestic manufactures and handicrafts to develop during the period could be attributed partially to this trade arrangement under which duty free treatment was granted also to United States products entering the Philippines.

The balance of payments of the prewar years (1927-1940) in direct contrast with its postwar pattern, consistently registered a surplus, except the 1927-1929 average which resulted in a deficit of $2.4 million. This was due principally to the fact that total exports, including gold, had been consistently larger than imports for all the years except 1938 and 1940.

United States Government agencies made disbursements including tax refunds ranging from $14 million in 1934 to $67 million in 1937. This represents a very small fraction of postwar receipts from these sources which in 1948 reached a peak of $339 million.

There was a net inflow of long term capital amounting to $.8 million from 1927 to 1929, due to a new issue of $4.2 million of bonds against an amortization of $3.4 million for all obligations. For later years there was a consistent net outflow averaging $3 million annually till 1940 due to the amortization of old obligations.

Other payments had always exceeded other receipts during the years preceding the war by an average of around $20 million a year. However, the deficits in these accounts were more than offset by the combined trade surplus and United States Government expenditures.

C. Recommendations of the Joint Preparatory Committee on Philippine Affairs

The pre-war structure of the economy emphasized the magnitude of adjustment that would be necessary for the Philippines to maintain an independent existence without the benefit of U.S. preferential trade treatment. On April 14, 1937 a Joint Preparatory Committee on Philippine Affairs was created pursuant to an arrangement between the Presidents of the United States and the Philippines "to study trade relations between the two countries and recommend a program for adjustment of the Philippine national economy."

In its report of May 20, 1938, the Committee recognized that the elimination of trade preferences would compel the Philippines not only to replace some of the existing agricultural and manufacturing production with other activities but also to seek means for maintaining adequate public revenue and purchasing power for imported articles. The Committee was of the opinion that the solutions to these problems should be sought through the creation during the contemplated 20-year transition period of new or additional production for:

a. Export, to substitute for foreign exchange earnings dependent on trade preferences; and

b. Domestic consumption, to substitute for imports.

The Committee warned against the creation of industries so ill-adapted to Philippine conditions as to be permanently inefficient and burdensome on the welfare of the people as a move that could very easily result from the attempt to substitute imports. However, although it called attention to the serious sacrifices in the standard of living that could result from a blind pursuit of economic self-sufficiency, the Committee recognized nevertheless the importance of encouraging the establishment of some industries which "although they would be relatively inefficient at the time of their introduction, give promise of so improving efficiency within a brief period as to be able to carry on operations without the continuance of the subsidy."

As to the revenue problem, the amount derived from domestic production dependent on trade preferences would have to be replaced with revenue from:

a. New or additional production to be created; and

b. Existing potential sources of revenue.

According to the Committee, a substantial part of the necessary economic adjustment will have to take the form of improvements in efficiency of existing industries. The immediate objective of a program of economic adjustment is to offset the adverse effects of the discontinuance of United States trade preferences. A further objective should be to widen the trade connections of the Philippines among as many countries as is efficiently practicable.

The Joint Preparatory Committee believed that Philippine receipts from the proceeds of export products sold in the United States as well as from tax refunds during the Commonwealth period should prove reasonably sufficient to finance a comprehensive program of economic adjustment. It recommended that the remittances of all tax proceeds during this period be reserved by the Government of the Philippines primarily for expenditure on a program of economic adjustment and should not be used directly or indirectly for financing ordinary government expenditures. It advocated that adjustment expenditures be correlated with decreases in employment and be strung over the entire eransitional period to avoid inflationary pressures.

Preference should be given to projects with a relatively low ratio of maintenance and operating expenses to capital outlays, to projects that would most likely benefit large rather than small groups of the population and would be a source of continuing rather than temporary benefits to the population, to projects that will not confer unnecessary benefits on one group at the expense of the general public and would prevent the seasonal development of acute conditions of employment in individual production districts. The Committee suggested that the government establish desirable agricultural and manufacturing industries which although not sufficiently attractive to private capital at the time, could well be expected to be self-supporting or revenue producing.

The Committee emphasized the importance of formulating the economic program as one coordinated whole rather than for it to be allowed to accumulate as a heterogenous mass of individual projects urged upon the administration "in a more or less random fashion by various interested minority groups". The Committee did not formulate a program itself but suggested that a planning organization be created; its recommendations also covered correlative measures to be taken in other fields such as health, vocational training, resource conservation, population distribution, tariff, etc. to insure a rounded program of adjustment and provide a maximum of incentives to vigorous economic development. (See Appendices for a detailed list of the measures recommended.)

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Appendices to Chapter 1

GROSS NATIONAL PRODUCT ORIGINATING FROM PRIMARY INDUSTRIES AND THEIR SUBSIDIARY, SECONDARY AND TERTIARY INDUSTRIES, 1938

ITEM		VALUE (MILLION PESOS)	PERCENT
Gross National Product		**1,163**	**100.0**
Primary industries and their subsidiary, secondary and tertiary industries		654	56.1
Primary industries		375[1]	32.2
Agricultural crops	261.8		
Livestock & poultry	19.7		
Fisheries	41.6		
Forestry	52.0		
Subsidiary, secondary and tertiary industries		279	23.9

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[1] Farm values accruing from primary producers in 1938.

SOURCES: 1. Joint Philippine-American Finance Commission
2. Yearbook of Philippine Statistics, 1946.

GROSS NATIONAL PRODUCT OF THE PHILIPPINES, CLASSIFIED BY PRIMARY, SECONDARY AND TERTIARY INDUSTRIES, 1938

ITEM	VALUE (MILLION PESOS)	PERCENT DISTRIBUTION
Gross National Product	1,163	100.0
Primary and subsidiary, secondary and tertiary industries	654	56.1
Agricultural crops & their products	482	41.4
Livestock and products	52	4.5
Forest products and buildings	60	5.1
Fisheries	60	5.1
Secondary industries	102	8.8
Mining	72	6.2
Manufacturing not elsewhere included	30	2.6
Tertiary industries	407	35.1

SOURCE: Joint Philippine-American Finance Commission.

POPULATION ESTIMATES OF THE PHILIPPINES[1]
1937-1940 AND 1946-1952

AS OF JULY 1

1937	Estimate	15,444,500
1938	Estimate	15,813,600
1939	(Census of Jan. 1)	16,000,303
1939	Estimate	16,191,200
1940	Estimate	16,577,000
1946	Estimate	18,337,500
1947	Estimate	18,781,700
1948	(Census of Oct. 1)	19,234,182
1949	Estimate	19,695,000
1950	Estimate	20,164,300
1951	Estimate	20,642,300
1952	Estimate	21,120,500

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[1] Population estimates for postwar years are adjusted to Census figures and for war mortality.

NUMBER OF GAINFUL WORKERS DISTRIBUTED BY INDUSTRY
(1938)

	Industry and Occupation	*Number of Persons*	*Percentage of Distribution*
	TOTAL	**6,355,582**	**100.00**
1.	**Agriculture**	**4,491,222**	**70.7**
2.	**Fishing**	**180,569**	**2.8**
3.	**Forestry and Hunting**	**26,820**	**0.4**
4.	**Mining and Quarrying**	**47,019**	**0.7**
5.	**Manufacturing and Mechanical Industries**	**601,335**	**9.5**
6.	**Transportation and Communication**	**203,596**	**3.2**
7.	**Domestic and Personal Services**	**332,321**	**5.2**
8.	**Professional Services**	**103,415**	**1.6**
9.	**Public Service (not elsewhere classified)**	**49,620**	**0.8**
10.	**Clerical**	**48,899**	**0.8**
11.	**Trade**	**270,766**	**4.3**

SOURCE OF BASIC DATA: Census of the Philippines for 1939, Volume II, Summary and General Report, as adjusted by the following:

(a) Elimination of housewives from the gainfully employed. This reduced the column under domestic and personal services by 3,145,763.

(b) Among the housewives so eliminated, there were wives of farmers, many of whom helped in the farms and may therefore be considered as gainfully employed. Total number of farmer's wives was estimated at 1,552,277 (equal to the number of male farmers). It is reasonable to assume that about 2/3 of these farmers' wives contribute substantially to farm work.

PHILIPPINE FARMS, BY SIZE AND PERCENTAGE DISTRIBUTION
1938 (Census figures)

Size of farm	No. of farms	Percent distribution
Total	1,634,726	100.0
Under 3.00 hectares	1,164,452	71.2
3.00 to 19.99 hectares	449,518	27.5
20.00 hectares and over	20,756	1.3

SOURCE OF DATA: Census of the Philippines for 1939, Volume II, Summary and General Report.

WAGES OF SKILLED AND UNSKILLED WAGE WORKERS IN INDUSTRY AND FARM
(PRE-WAR — 1941)

	FARM	INDUSTRIAL	
	Wage Rate[1]	Skilled Laborer	Unskilled Laborer
	(Pesos)	(Pesos)	
Philipines	0.56		
Manila		2.29	1.24
Luzon: Ilocos-Mountain Region	0.53		
Luzon: Cagayan Valley, including Batanes	0.61		
Central Luzon, including Zambales	0.67		
Southern Luzon, including Marinduque and Mindoro	0.66		
Southeastern Luzon, Bicol	0.52		
Eastern Visayas	0.37		
Western Visayas	0.43		
Mindanao, including Sulu	0.60		

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[1] Wage rates are average of daily figures.

SOURCES: Bureau of the Census and Statistics.

LAND TENURE
(1938)

	Number of farms	Farm area (hectares)	Farm land classified according to use				
			Cultivated Land(hectares)	Idle land (hectares)	Pasture land (hectares)	Other land (hectares)	Irrigated land (hectares)
PHILIPPINES	1,634,726	6,690,593.87	3,953,810.64	1,108,159.35	732,222.20	248,982.26	516,152.08
Owners	804,786	3,682,551.92	1,937,309.89	798,386.52	375,779.74	146,158.35	162,118.85
Part owners	254,637	818,191.14	594,195.73	89,851.49	59,282.27	32,903.28	120,426.72
Share tenants	547,953	1,579,609.69	1,213,923.20	146,353.24	107,528.76	54,199.85	213,036.04
Share-cash tenants	18,652	33,403.92	24,112.47	2,758.10	4,394.32	1,204.24	5,104.82
Cash tenants	17,111	68,152.71	44,107.69	7,301.82	9,187.90	4,793.18	5,877.23
Farm managers	1,587	508,684.49	140,161.66	63,508.18	176,049.21	9,723.36	9,588.42

Source of Data: Census of the Philippines for 1939, Volume II, Summary and General Report.

PHILIPPINE EXPORTS TO THE UNITED STATES IN 1940

Total Exports of the Philippines in 1940	₱ 311.8 million
Total Value Exported to the United States	258.3 „
Percentage of Exports to U. S. in the Total Export Distribution	82.8%
Percentage of Products in the total exports to U. S. which cannot compete in the markets unless given the tariff protection	64.4%
Articles not dependent upon trade protection afforded in the U. S. Markets	35.6%

1.	Base Metals	₱ 4.628	million
2.	Gold & Silver Ore & Bullion	75.049	„
3.	Abaca Unmanufactured	10.593	„
	Grand Total	₱90.270	„

Articles strongly dependent upon trade protection in the United States markets:

1.	Sugar	₱87,170	thousand
2.	Coconut Oil	16,248	„
3.	Copra	12,389	„
4.	Desiccated Coconut	7,369	”
5.	Copra Meal or Cake	2,285	„
6.	Cordage	1,496	„
7.	Cigars	5,996	„
8.	Scrap Tobacco	879	„
9.	Embroideries	9,177	„
10.	Pineapple	4,998	„
11.	Buntal Fibers	125	„
12.	Buttons of Pearl and Shell	462	„

VALUE OF EXPORTS BY INDUSTRY
(1938)

Commodity	All Countries		United States	
	Value of	Per cent	Value of	Per cent of U.S. to total exports
Total	294,003,059	100.0		
1. Sugar	100,365,461	34.14	100,005,372	99.96
2. Coconut products:				
a) Copra	24,512,028	8.34	16,209,171	66.13
b) Coconut oil	21,532,910	7.32	20,706,682	96.16
c) Desiccated coconut	7,632,715	2.60	7,621,299	99.85
d) Copra Meal and cake	5,495,086	1.87	1,574,857	28.66
3. Fiber products:				
a) Abaca	20,318,347	6.91	4,863,299	23.93
b) Cordage	2,398,062	.82	666,937	27.81
c) Maguey, manufactured	652,746	.22		
4. Tobacco products	9,929,279	3.38	6,335,251	63.80
5. Minerals & metals[1]	7,450,733	2.53		
6. Gold	61,013,588	20.75		
7. Chromite	1,576,845	.54		
8. Timber, lumber & logs	5,650,541	1.92	1,573,905	27.85
9. Embroideries	10,215,802	3.47	10,140,052	99.26
10. Other domestic exports	12,387,206	4.21		
11. Re-exports	2,871,710	.98		

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[1] Exclusive of gold and chromite.

Source of Basic Data: Annual Report of the Insular Collector of Customs for the Fiscal Year Ending December 31, 1938.

PHILIPPINE ISLANDS — BALANCE OF PAYMENTS
1927 - 1949
(Millions of Dollars)

	Average 1927-1929	1932	1933	1934	1935	1936	1937	1938	1939	1940	1945	1946	1947	1948	1949
Exports	158.4	95.3	105.8	110.4	94.3	136.5	151.3	116.5	120.9	114.8	.7	64.2	264.7	317.8	260.-
Freight and insurance	-	-	-	-	-	-	-	-	-	-	-		5.0	5.0	5.0
Exports (c.i.f.)	158.4	95.3	105.8	110.4	94.3	136.5	151.3	116.5	120.9	114.8	.7	64.2	269.7	322.8	265.0
Imports	132.6	79.4	67.4	83.6	85.5	101.2	109.0	132.7	122.8	134.8	29.0	295.9	511.3	585.9	561.-
Freight and insurance	18.7	11.9	12.2	13.3	13.4	15.5	15.9	18.8	18.3	19.8	-	39.4	76.7	87.9	112.-
Imports (c.i.f.)	151.3	91.3	79.6	96.9	98.9	116.7	124.9	151.5	141.1	154.6	29.0	335.3	588.0	673.8	673.-
Trade Balance	7.1	4.0	26.2	13.5	(4.6)	19.8	26.4	(35.0)	(20.2)	(39.8)	(28.3)	(271.1)	(318.3)	(351.0)	(408.0)
Gold Exports	2.3	7.2	4.9	9.9	13.0	19.0	24.3	30.5	35.9	37.9	-	-	2.3	7.1	-
U. S. Government Expenditures	17.8	17.7	15.4	13.7	26.1	24.2	18.0	18.8	19.4	21.3	284.3	118.5	275.0	338.8	323.5
U. S. Tax Refunds	.4	.4	.4	.4	.5	.7	48.5	20.4	15.2	22.3	-	-	-	-	
Total U. S. Disbursements	18.2	18.1	15.8	14.1	26.6	24.9	66.5	39.2	34.6	43.6	284.3	118.5	275.0	338.8	323.5
Long Term Capital (New issues)	4.2	1.9	.6	-	-	-	-	-	-	-	-	-	60.0	-	-
Long Term Capital (Amortization)	3.4	4.7	2.7	2.9	3.8	3.4	4.3	1.9	4.0	3.1	-	5.5	1.1	3.0	2.8
Balance	.8	(2.8)	(2.1)	(2.9)	(3.8)	(3.4)	(4.3)	(1.9)	(4.0)	(3.1)	-	(5.5)	58.9	(3.0)	(2.8)
Other Receipts															
Tourist Expenditures	.8	.8	.8	1.3	1.3	1.5	1.8	2.2	2.6	2.4	-		7.5	10.0	1.0
Remittances	4.3	3.8	3.8	3.8	4.0	4.2	4.2	4.0	4.0	4.0	-	42.0	112.4	37.4	29.5
Interest and Dividends	2.4	2.2	1.6	3.0	1.9	1.9	2.1	2.1	2.1	2.0	-	2.3	2.4	3.3	2.5
Total	7.5	6.8	6.2	8.1	7.2	7.6	8.1	8.3	8.7	8.4	-	44.3	122.3	50.7	33.0
Other Payments															
Tourist Expenditures	11.1	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	6.4	11.7	13.4	5.0
Interest	6.2	5.2	5.1	4.6	4.1	4.0	4.0	4.1	3.8	3.3	-	1.1	1.9	3.4	
Dividends	11.7	11.5	11.5	12.0	12.0	12.0	12.0	10.9	13.8	14.0	-				
Remittances	9.3	8.0	8.0	8.0	8.0	8.0	10.5	9.3	14.0	10.4	-	59.7	93.5	66.6	84.7
Total	38.3	27.2	27.1	26.6	26.1	26.0	28.5	26.3	33.6	29.7	-	67.2	107.1	83.4	89.7
Balance of Other Receipts & Payments	(30.8)	(20.4)	(20.9)	(18.5)	(18.9)	(18.4)	(20.4)	(18.0)	(24.9)	(21.3)	-	(22.9)	(15.2)	(32.7)	(56.7)
Net Surplus or Deficit	(2.4)	6.1	23.9	16.1	12.3	41.9	92.5	14.8	21.4	17.3	256.0	(181.0)	33.1	(40.8)	(144.-)
Net Short-Term Capital Movement	1.7	.5	4.4	5.5	7.7	14.3	64.1	6.9	.1	13.5	256.0	(218.0)	28.5	(32.2)	(161.-)
Errors and Omissions	(4.1)	5.6	19.5	10.6	4.6	27.6	78.4	7.9	21.3	3.8	-	37.0	4.6	(8.6)	17.-
Balance	(2.4)	6.1	23.9	16.1	12.3	41.9	92.5	14.8	21.4	17.3	256.0	(181.0)	33.1	(40.8)	(144.-)

ECONOMIC ADJUSTMENT PROJECTS

(As recommended by the Joint Preparatory Committee)

1. Improvement of technical training
    a. Hiring of foreign technicians
    b. Scholarships for training abroad
    c. Importation of foreign scholars
    d. Maintenance of adequate public schools
    e. More agricultural, trade and vocational schools

2. Improvement of transportation
    a. Additional public roads, including farm to market roads
    b. Improved inter-island transport facilities

3. Conservation of Natural Resources
    a. Reforestation and afforestation
    b. Soil conservation
        1) Contour cultivation
        2) Strip cropping
        3) Terracing
        4) Use of cover crops
    c. Fish conservation
        1) Only mature fish should be caught
        2) Prohibit use of dynamite or poisoning
        3) Government operation of hatcheries
        4) Protection of spawning grounds
        5) Adequate patrol service to enforce fishing regulations

4. Improvement of agriculture
    a. Soil survey and mapping —
    This will serve to indicate the crops adopted for each type of soil, the appropriate kind and quantity of fertilizers needed, etc.
    b. National agricultural experiment stations and national agricultural service stations. These will be entrusted with:
        1) Development of agricultural science
        2) Development of improved strains of plants and animals and improved farming practices
        3) Propagation and distribution of improved seeds, plants, and animals to farmers.
    c. National agricultural service stations
        1) Propagation and distribution of improved strains of plants and animals developed by the national experiment station

2) Dissemination of information, partly by demonstration, on improved agricultural practices
3) Rendering of special technical aid to farmers
4) Performance of educational work, largely through demonstration, on improvement in the field of home economics
5) Performance of administrative work for, and in cooperation with, other governmental agencies and projects

d. Agricultural credit

The committee recommended extensive study of the problems and suggested that possibly the most desirable results could be obtained if a policy were adopted of attempting first, to reduce the present needs for agricultural credit to the minimum through such means as increased crop diversification and improved marketing facilities and secondly, to devise a plan to supply at low cost only the remaining or irreducible credit requirements.

e. Agricultural marketing and purchasing

The Committee stressed the need of further study on this subject. Tentative suggestions given were:

1) A system of public agricultural warehouses throughout the following districts
2) Government financed and operated agricultural marketing and purchasing organizations

f. Agricultural — Tenancy conditions —

The Committee favored a redistribution of the agricultural population by encouraging settlement in sparsely populated areas rather than government purchase and resale to tenants of big landed estates. The Committee doubted the wisdom of the second course of action in view of the limited funds available. It recommended that the Government devote its available funds to the development of large scale resettlement projects. This would require planning and development work before actual occupation of the lands. It was also suggested that settlement of families on public domain outside of the regularly established resettlement districts be stopped.

It would appear necessary, in order to assure the success of resettlement projects, that they be surveyed and subdivided in accordance with the requirements of the community and the intended uses of the land, that a supply of potable water be developed, that adequate disease-control measures be taken, that a portion of each plot be cleared for cultivation before it is turned over to the prospective settlement family, and that at least the initial steps be taken in the establishment of marketing, purchasing, educational, and medical facilities. It may also be necessary to provide some additional requirements such as livestock, equipment, and initial plantings.

5. Improvement of manufacturing

Because of the lack in some of the principal factors necessary for large scale industrialization, such as cheap power, abundant supply of technological training, and large internal markets, the Committee thought it was not possible to establish (at that stage of development) efficient units of mass-production industry.

The Committee favored the expansion of tried manufactures and a careful survey of possibilities for new manufactures. It suggested that the government take the initiative in establishing new manufacturing industries and in this connection the present organization policies and objectives of the National Development Company should be reviewed in order to determine whether their adaptability to the present and future problems of economic adjustment could be increased.

6. Improvement of tariff schedules —

The Committee suggested a revision of the tariff schedules which had been in effect for 30 years, so as to make these more suitable to current trade conditions.

7. Improvement of Public Revenue Systems

   a. Completion and bringing up to date of public land records and assessments to enable local governments to increase revenues.
   b. Expedite land surveys and adjudication of titles.
   c. Establish a more equitable appraisal of property for tax assessments.
   d. Careful study of the tax system as a whole so as to distribute burden more nearly in proportion to ability to pay, and to lower taxes on struggling industries.

   The Committee also suggested the feasibility of a special tax to discourage the acquisition of plots of land too small to meet individual family requirements reasonably.

8. Improvement of Health Conditions —

   a. Provide adequate wells for safe drinking water
   b. Construction of waste-disposal facilities
   c. Improvement in general education
   d. Construction of more public hospitals
   e. Low cost medical dispensaries
   f. More rural nursing services

CHAPTER II

THE EFFECT OF THE WAR ON INDUSTRY AND AGRICULTURE

The Japanese invasion and occupation of the Philippines and the liberation campaign left in their wake battered cities, a prostrate economy and widespread misery. The total losses for the country as estimated by the Special Investigating Mission of the U.S. War Damage Corporation follows:

Dec. 7, 1941 to the end of the War

	TOTAL LOSS (U. S. CURRENCY)		ESTIMATED NUMBER OF CLAIMS
Public Property	$195,347,595	—	1,000
Catholic Property	125,000,000	—	100
Other Church Properties	14,000,000	—	15
Private Properties	464,420,000	—	738,000
Total	$798,767,595	—	739,115

Source: Survey of War Damage in the Philippines — Report of the Special Investigating Mission, War Damage Corporation, September, 1945, Page 3.

The estimated value of physical damages suffered by different industries have been calculated as follows:

	DAMAGES	ESTIMATED VALUE OF ASSESTS 1941
Rice Industry	₱140,291,000	₱ 1,500,000,000
Sugar Industry	94,590,000	451,500,000
Coconut Industry	51,264,000	440,000,000
Abaca Industry	40,517,000	95,000,000
Tobacco Industry	13,302,000	60,000,000
Livestock Industry	81,203,000	142,138,000
Lumber Industry	19,948,000	46,000,000
Mining Industry	121,210,000	150,000,000
Fishery Industry	20,145,000	46,106,000
Total	₱582,470,000	₱ 2,930,744,000

Source: The Department of Agriculture and Natural Resources.

Agriculture and industry suffered a severe dislocation. Practically the entire inter-island shipping fleet was lost. One-third of the prewar total of 1,141 kilometers of railway was thrown out of operation and there was an acute shortage of rolling stock. The manufacturing and mining industries sustained severe destruction.

At the beginning of 1947 coconut oil production was only about one-tenth of prewar production. Sugar production decreased from an average of one million tons before the war to 63,000 tons during the 1945-46 season. The country had to import sugar from abroad to meet local demand. The low ebb of industrial activity was indicated by the fact that at the beginning of 1947 the monthly consumption of electricity was only one-tenth of the 1941 average. Palay producation during 1946 was a little more than two-thirds of the 1940 level. The tobacco crop was only one-half and the abaca output, less than one-third, of the prewar average. Only in copra was there a rapid recovery of production and export, the highest reached being 998,140 m. t. in 1947 or 70 per cent above the 1936-1940 average. The high prices and the relatively undamaged coconut groves made this record possible. The livestock industry also suffered tremendous losses.

The extent of war damages is clearly indicated in the following comparison of prewar and postwar production of important agricultural crops and industries.

		ACTUAL PRODUCTION		
	UNIT	1940	1946	PERCENTAGE OF DECREASE
Rice, paddy (rough)	metric tons	2,362,746	1,623,330	31.29
Fruits and nuts	„	256,340	261,430	(19.86)
Fish	„	170,000	49,560	70.85
Sugar	„	997,067	62,640	93.72
Copra.............	„	738,474	203,810	72.40
Abaca	„	172,343	30,420	82.35
Tobacco	„	32,115	14,330	55.38
Logs	board feet	898,000,000	239,994,000	73.27
Sawn Lumber	„	332,910,000	108,122,000	67.52
Root Crops	metric tons	615,026	434,000	29.42
Beans & vegetables .	„	42,430	32,240	24.02
Livestock and Poultry:				
Carabaos	heads	3,015,400	1,388,870	53.94
Cattle	„	1,396,260	443,530	68.23

	Unit	Production year 1940	1945-46	Percentage of Decrease
Horses	heads	343,500	151,260	55.97
Hogs	"	4,446,790	1,460,780	67.15
Goats	"	420,000[1]	182,730	56.49
Sheep	"	40,000[1]	19,030	52.43
Chickens	"	27,000,000[1]	7,166,550	73.46
Ducks	"	700,000[1]	329,610	52.91
Geese	"	30,000[1]	19,890	33.70
Turkeys	"	45,000[1]	19,150	57.44
Mining:				
Chromite	l.t.	189,919	58,000	69.46
Copper	lb.	20,014,918	——	100.00
Gold	fine oz.	1,120,838	61,200	94.54
Iron	l.t.	1,221,126	——	100.00
Lead	lb.	2,080,381	8,140	99.61
Manganese	l.t.	48,036	——	100.00
		1941		% Decrease
Railways:				
Locomotive		159	17[2]	89.31
Freight cars		1,978	576[2]	70.88
Road Transport:				
Passenger cars		33,895	14,045[2]	58.56
Trucks		15,755	26,858[2]	(70.47)
Air Ports		85	62	27.06
Shipping (registered steamers, steam launches, and/or ships, auxiliary schooners, boats, launches, bancas with motors, scows, lighters, barges, etc. 1940		1,701	—	

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[1] Estimates only.

[2] A very large number of these were service vehicles supplied by the U. S. Army, upon liberation of the country.

LIST OF APPENDICES TO CHAPTER II

1. NUMBER AND VALUE OF WAR DAMAGE CLAIMS RECEIVED AND RECORDED UP TO AUGUST 4, 1950 BY THE WAR DAMAGE COMMISSION

NUMBER AND VALUE OF WAR DAMAGE CLAIMS RECEIVED AND RECORDED UP TO AUGUST 4, 1950 BY THE WAR DAMAGE COMMISSION

	Number of Claims Through August 4, 1950	Claimed Value of Claims Recorded
I. *Private Claims*	1,248,786	₱2,445,592,253.24
1) ₱1,000 and less	997,913	513,552,055.75
2) 1,000.01 to 50,000	247,489	797,651,329.20
3) 50,000.01 to 100,000	1,675	115,243,907.64
4) 100,000.01 to 500,000	1,370	268,393,721.28
5) Over 500,000	339	750,751,239.37
II. *Public Claims*	1,571[a]	380,809,429.84
1) Schools	—	75,140,798.74
2) Hospitals & Dispensaries	—	8,099,477.19
3) Other Public Buildings	—	73,826,099.44
4) Furniture & Equipment	—	223,743,054.47
GRAND TOTAL	1,250,357	₱2,826,401,683.08

SOURCE: United States — Philippine War Damage Commission, Bureau of Administration, Fiscal Division, *Report No. 267* — Week ended August 4, 1950.

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[a] No breakdown given.

CHAPTER III

Planning after the War

The destruction and dislocations caused by the war created problems of reconstruction and rehabilitation of tremendous proportions. Two surveys of the economy were made subsequently, one by the H. E. Beyster Corporation and the other by the Joint Philippine-American Finance Commission.

A. The Technical Memorandum on Industrial Rehabilitation and Development Prepared under the Supervision of H. E. Beyster Corporation

This technical memorandum dated October 28, 1947, purported to present a general outline of an over-all "Agro-Industrial Program as rapidly as possible... at the same time giving thought and care to the presentation of the essentials covering the desired economic development of the Republic." The report attempted to give „an over-all view of the industrial possibilities awaiting expansion." It described the targets and estimated the total investments of projects classified into eight categories, as follows:

1. Metals
2. Chemicals
3. Mining and Quarrying
4. Food and Farm
5. Textiles
6. Forest Products
7. Public Services
8. Miscellaneous and Minor Industries

The projects suggested for purposes both of rehabilitation of pre-war industries and development of new ones, were estimated to require a total investment of ₱3,167 million. The breakdown given of this total was not complete and no summary of estimated capital investments was provided by the report. A summary of the individual project estimates added up to a total amount of ₱1,741,420,746.

The grand total of a little over ₱3 billion was intended to cover the investment requirements of both government and private enterprises. No clear segregation was made as between government projects and those that will be left to private initiative. No breakdown of investment estimates as between expenditures for local labor and materials and import requirements was given. The annual investment was placed at about

₱104.5 million. No attempt was made whatsoever to go into the problem of how to finance the investment requirements of the proposals presented.

The report suggested that projects proposed be developed over a period of from 10 to 15 years. It made a reference to a short-range program of 5 years embracing a major portion of Japanese reparation goods and other new industries that might be purchased but the specific projects included within this 5-year program was not clearly indicated. This short term program would involve expenditures of approximately ₱500 million and it was suggested that it be undertaken by the government for the benefit of the economy.

The report did not describe the structure either of the organization that will handle the planning work or that which would take charge of program implementation, supervision and coordination. Assessment of the impact of the program on the balance of payments and its effects on future national income were not attempted. The report was unsuitable and inadequate to serve as a guide for action in economic development.

B. Recommendations of the Joint Philippine American Finance Commission and the Hibben Memorandum

In September, 1946, the Government of the United States and the Government of the Philippines agreed upon the creation of a joint finance commission to consider the financial and budgetary problems of the Philippine Government and make recommendations to the two governments with reference to taxes, budget, public debt, currency and banking reform, exchange and trade problems.

In its report of June 7, 1947, the Joint Philippine American Finance Commission, as this body was called, underlined two major economic adjustments to be made in years ahead. The first is to the tapering off of United States Government payments after 1950, a problem for which the economy could well prepare, in the opinion of the Commission, by using the intervening period to increase its productive capacity to a point where it could currently earn the high standard of consumption that United States Government expenditures temporarily supported. The second adjustment is to the gradual loss after 1954 of the favored position of the Philippines in the American market.

The report outlines a comprehensive and integrated financial, monetary, fiscal, and trade program to achieve economic recovery and development and the establishment of sound government financial policies and practices suited to postwar conditions and to the independent status of the Philippines.

In line with the recommendations of the Joint Philippine American Finance Commission, the Government instituted a number of administrative and legislative measures. In addition to the upward revision of tax rates made in late 1946, taxes on luxuries and non-essentials were raised in 1948, again in 1949, and certain tax measures were approved by Congress in 1950. In the middle of 1948, legislation embodying currency and banking reforms, including the establishment of a central bank were approved; the latter institution having been in operation since January, 1949. In 1947 measures were taken to improve the system of collecting the sales tax; tax collection agencies were strengthened and salaries of revenue agents raised.

Few phases of the Government's financial program met stronger opposition than the Import Control Law which was approved in July, 1948. The American members of the Joint Philippine American Finance Commission recommended drastic limitations on luxury and semi-luxury imports. Other American groups on the other hand denounced such action as anti-American economic protectionism. Extended public hearings on the draft of the import control bill delayed implementation of this measure until January, 1949.

Upon recommendation of the Commission, a bugetary loan of $60 million was granted to the Philippine Government by the U. S. Rehabilitation Finance Corporation. In addition, the Commission recommended that until Central Bank could be established and domestic borrowing resorted to, a note issue of ₱100 million, guaranteed by the U.S. Exhange Stabilization Fund, might be made to meet a probable budgetary deficit. Although a deficit was actually incurred, the Government did not consider it proper to follow the Commission in this regard.

A member[1] of the Commission's technical staff reviewed the planning work that was in progress or had already been done by different government agencies and private organizations and attempted to integrate and summarize the maximum estimated capital requirements over a 5-year period of a program to expand agricultural and industrial output and to provide additional services required by such expansion. He attempted to indicate broadly and tentatively, desirable alternative avenues for investment, classifying them into 4 major categories:

a) Increased production of foodstuffs;
b) Increased production of non-foodstuffs for consumption and exports;
c) Expansion of Philippine exports; and
d) Increased output of services.

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[1] Mr. Thomas Hibben, Adviser for Economic Development, Office of International Trade, U. S. Department of Commerce.

The estimates did not cover the requirements for new building construction, whether public or private, residential or commercial, as well as public works not required for the expansion of production.

Because his intention was merely to provide "a guide rather than a blueprint of action" Mr. Hibben did not attempt to suggest priorities among the projects proposed nor did he suggest the type of organization that would be required for implementation, supervision and coordination. The investment outlets he described included both those that will be undertaken by government and private enterprise. No precise grouping on this basis was made, however.

The estimates presented of investment requirements of each project was intended merely to indicate the order of magnitude of investment that would be desirable. The technical studies for some of the projects proposed had not yet been completed and consequently, close estimates of project requirements could not be given. Mr. Hibben was careful to point out that the magnitudes given should not be interpreted as a prediction of the rate of investment over the program period. Not having gone into the problem of how to provide the financial requirements of the program, he emphasized that the probable annual rate of investment depends upon such factors as the amount of reparation goods to be received from Japan, the response of foreign capital to the efforts being made by the Government to encourage outside investment in the Philippines, the rate of savings that would actually materialize and the extent to which such savings could be channeled into venture capital investments. This, in turn, would depend upon the success of other measures proposed by the Commission. These factors were unknown variables at the time Mr. Hibben wrote his memorandum. Furthermore, the extent of implementation will depend not only on the availability of capital but on the availability of management, technical personnel, trained labor, machinery and equipment.

The magnitude of investment considered necessary to carry out the program was estimated at ₱1,962 million of which ₱722 million was for local labor and domestic materials and ₱1,240 million for import requirements. An additional ₱215 million was calculated as the probable cost of freight and insurance. Although an attempt was made to project the investment requirements over five years it was frankly recognized that the actual timing of expenditures would depend, as already stated, on many technical factors still unknown at the time and it was not sugsugested that the entire program could or should be consumated over a five-year period.

The Joint Commission, foreseeing the difficulty which might be encountered in raising the funds necessary to finance a rehabilitation and development program, suggested that the Philippine Government apply to the Export & Import Bank and to the International Bank for Reconstruction and Development, on a project-to-project basis, for the foreign exchange requirements of such a program. Finally, it also recommended that should the Philippine Government still find, after the establishment of the Central Bank, that the internal sources of funds "are inadequate to provide a desirable rate of agricultural and industrial expansion, the United States Government should give full and sympathetic consideration to any request of the Philippine Government for additional assistance."

LIST OF APPENDICES TO CHAPTER III

1. PROPOSED BEYSTER PROGRAM FOR PHILIPPINE INDUSTRIAL REHABILITATION AND DEVELOPMENT
2. HIBBEN PROGRAM — ESTIMATED INCREASED PRODUCTION OF FOODSTUFFS — 1948-1952
3. ESTIMATED INCREASED PRODUCTION OF NON-FOODSTUFFS FOR CONSUMPTION AND EXPORTS — 1948-1952
4. ESTIMATED EXPANSION OF PHILIPPINE EXPORTS — 1948-1952
5. ESTIMATED INCREASE OUTPUT OF SERVICES — 1948-1952
6. ESTIMATED INVESTMENTS FOR CONSTRUCTION — 1948-1952

APPENDICES TO CHAPTER III

PROPOSED BEYSTER PROGRAM FOR PHILIPPINE INDUSTRIAL REHABILITATION AND DEVELOPMENT

Projects and Developments	Unit	Capacity	Estimated capital investment	Totals
1. METAL				
2—Steel Plants	annual tons	150,000	₱118,722,000	
1—Iron Foundry	tons daily	128	1,708,000	
1—Steel Pipe Plant	pipes yearly	10,080	511,712	
1—Nail Plant	kegs „	100,000	823,000	
1—Screws, Nuts, Bolts, etc.	tons „	3,500	900,000	
1—Forge Plant	tons „	25,000	3,500,000	
10—Sheet Metal Plant	sq. ft.	36,000,000	3,000,000	
25—Machine Tools Jobbing Shop	units	17,000	1,000,000	
2—Farm Implements Plants		——	750,000	
1—Ferro Chrome Alloy	tons yearly	14,000	7,411,900	
1—Copper Smelter & Refining	tons yearly	15,000	17,000,000	
2—Copper Wire Plants		10,000	4,140,000	
4—Non-ferrous Foundries	tons yearly	20,000	4,600,000	
1—Aluminum Blanks Plant	pcs	100,000	200,000	₱164,266,612
Subsidiary Metal Industries to be initiated mostly by private Capital			₱25,000,000	25,000,000

II. CHEMICALS

A. Category I — Chemical industries, the establishment of which is based on the possible receipt of machinery and equipment as the Republic's share of the Japanese ad interim reparations payment.

1—Sulphuric Acid plant	tons yearly	41,000	₱ 4,700,000	
1—Electrolytic Caustic Soda Plant	mt. tons yearly	23,000	10,700,000	
1—Soda Ash Plant	mt. yearly	1,300	1,800,000	17,200,000

B. Category II — Chemical industries, the establishment of which will require the purchase or acquisition of necessary machinery and equipment from other sources.

1—Hydrochloric Acid Plant	tons yearly	1,500	₱ 350,000	
1—Nitric Acid Plant	tons yearly	20,000	8,000,000	
1—Chemical Fertilizers		55,000	12,000,000	
1—Salt Plant	tons yearly	200	1,800,000	
1—Plastics		——	2,000,000	
1—Soap Plant	tons yearly	3,600	500,000	
1—Toilet Preparations			1,500,000	
1—Dynamite Plant	mt	3,000	2,700,000	
1—Paints Varnish & Pigment Plant	m5	3,000	3,500,000	
2—Paste & Glue Plant	tons	100	300,000	
1—Starch Plant	tons	10,000	1,400,000	34,050,000
		Total Carried Forward		₱240,516,612

Total Brought Forward				**₱ 240,516,612**
III. MINING AND QUARRYING				
Mines Rehabilitation			₱484,000,000	
Romblon Marble Quarrying	Expansion Purposes		600,000	
Expansion Cement Project	bbls	1,000,000		
1 Cement Block Plant	blocks daily	1,000	1,000	
1 Asbestos-Cement Wallboard Plant	sheets daily	1,000	1,100,000	
1 Vitreous Tile Plant	daily tiles	400	1,250,000	495,411,000
IV. FOOD AND FARM PRODUCTS				
1 Rice Bran Oil Plant	tons daily	100	₱ 750,000	
Fishing Industry Pond Culture			38,000	
Offshore			4,400	
Production Efficiency			2,700	
Marketing & Distribution			2,700	
Livestock Industry			20,150,000	
Leather Manufacturing Plant			600,000	
Sugar Industry Rehabilitation			270,000,000	
8 Alcohol Distilleries	gals.	2,500,000	8,255,770	
1 Bagasse Wallboard Plant	sq. ft. daily	50,000	1,132,500	
Expansion of Rice & Corn Mills			20,000,000	
1 Vegetable Oil Pilot Plant			400,000	
4 Coconut Oil Processing Plants	tons	280	3,000,000	
Rehabilitation of Tobacco Factories			6,000,000	
Ramie Machinery Pilot Plant			600,000	330,936,070

V. TEXTILES & ALLIED INDUSTRIES

5 Textile Plants	unit spindles	50,000	₱ 40,000,000	
1 Small Steam Power			1,400,000	
1 Fish Twine and Net Factory	lineal ft.	12,000,000	3,649,994	
1 Rubber Goods Extraction Plant	annual tons	3,000	700,000	45,749,994

VI. FOREST PRODUCTS

1 Plywood Plant	sq. ft. daily	75,000	₱ 850,000	
7 Paper & Pulp Plants	tons	65,200	30,000,000	
1 Paper Bag	tons yrly.	20,000,000	1,820,000	
1 Wood Distillation & Charcoal Plant	mt yrly	60,000	10,000,000	
1 Charcoal Plant for Steel Mills (Pilot Plant)			24,000,000	66,670,000

VII. PUBLIC SERVICES

Power — 5 yr. programme				
Hydro electric	kv.	600,000	₱ 72,000,000	
Steam			40,000,000	
Diesel			8,500,000	
Total Carried Forward			₱120,500,000	₱1,179,253,676

Totals Brought Forward			₱120,500,000	₱1,179,283,676
VII. PUBLIC SERVICES (Cont'd)				
Transportation				
Roads			134,300,000	
Aeronautics			16,000,000	
Shipping			50,000,000	
Port Facilities			31,347,070	
Railroads			25,000,000	
Communication			——	
Public Safety			——	
Sanitations			——	
Education			——	
Water Systems			20,000,000	
Irrigations			10,000,000	
Hospitals			105,000,000	512,147,070
VIII. MISCELLANEOUS — MINOR INDUSTRY				
Housing Units		240,000	₱ 2,040,000	
Prefabricated Housing Plant Units		3,000	1,000,000	
Shipyards and Drydocks			46,100,000	
Cottage Industries Survey			200,000	
Minor Industries				
Button Mfg. buttons	gross	1,000,000	500,000	
Sheet Glass Pilot Plant	lbs. daily	1,000	150,000	49,990,000
GRAND TOTAL				₱1,741,420,746

NOTE: The grand total as given above does not tally with the stated amount of ₱1,567,353,489 in the discussion as Housing, Hospitals, Shipping and Port Facilities proposed expenditures are included in the grand total.

HIBBEN PROGRAM

ESTIMATED INCREASED PRODUCTION OF FOODSTUFFS
1948 — 1952

	TARGET	REQUIRED INVESTMENT
1. Reconstruction & Extension of Agricultural Experiment Station and Demonstration Projects		₱ 4,000,000.00
2. Land Settlement Projects (5 years)	100,000 Ha. per yr	75,000,000.00
3. Irrigation & Drainage Projects (5 years)		40,000,000.00
4. Additional facilities for Fruit & Vegetable Product Canning (5 years)		2,000,000.00 *
5. Replacement of livestock	100,000 tons	2,500,000.00
6. Additional Livestock, particularly Beef Cattle		3,000,000.00 *
7. Increase in Rice & Corn Milling Capacity		9,900,000.00
8. Increase in Slaughter & Packing Facilities (5 years)		4,000,000.00 *
9. Increase in Tanning Facilities		1,000,000.00
10. Increase in Commercial Fishing Facilities		10,000,000.00
11. Additional Canning & Drying (5 years)	540,000.00	4,000,000.00 *
12. Reconstruction of Fish Ponds		5,000,000.00
13. Expansion of Fish Ponds (5 years)		10,000,000.00
14. Development of Off-Shore Fleet (5 years)	75,000 tons	3,000,000.00 *
15. Additional Ice Plant Facilities	50,000 tons	2,000,000.00
TOTAL		₱175,400,000.00

SOURCE: Reports of Joint Philippine-American Finance Commission, Philippine Economic Development, June 7, 1947.

* Will provide eventual export.

ESTIMATED INCREASED PRODUCTION OF NON-FOODSTUFFS FOR CONSUMPTION AND EXPORTS

1948 — 1952

	TARGET	REQUIRED INVESTMENT
1. Sulfuric Acid	45,000 tons (15,000 tons-initial and 30,000 tons-additional)	₱ 4,800,000.00
2. Caustic Soda, etc., Soda Ash	30,000 tons (15,000 tons-initial and 15,000 tons-additional)	11,600,000.00
3. Salt-initial (brine)		1,000,000.00
4. Dynamite	5,000 tons annually	1,000,000.00
5. Super-phosphate	60,000 tons 30,000 tons-initial and 30,000 tons-additional)	2,000,000.00
6. Nitrogeneous-Fertilizer N-content	20,000 tons annually	14,000,000.00
7. Soap	20,000 tons annually	2,400,000.00
8. Toilet Preparation	(₱10,000,000.00) production valued	3,000,000.00
9. Paint & Varnishes	(₱ 2,000,000.00) production annually	500,000.00
10. Starch	7,000.00 tons annually	1,000,000.00
11. 2 Spinning Mills & 2 Weaving Mills	170,000 sq. yards 10,000 tons rayon fabrics annually	32,000,000.00
12. 2 Knitting Mills		2,000,000.00
13. 1 Bagging Mill		2,000,000.00
14. 2 Fish Net Mills		4,000,000.00
15. 1 Rayon Mill		5,000,000.00
16. 2 Shoes Factories	3,600,000 pairs (360 day year)	10,000,000.00
17. 1 Paper Mill (Abaca Waste)	5,000 tons a year	2,000,000.00
18. Insulation Board Mill	5,000 tons a year	1,500,000.00
19. 1 News Print Mill	5,000 tons a year	2,000,000.00

20. 1 Paper Product Plant	5,000 tons a year	1,000,000.00
21. 1 Bottle & Tableware	500,000 bottle per day	3,000,000.00
22. 1 Flat Glass	5,000 tons a year	1,500,000.00
23. 2 Brick & Hollow Tile		1,200,000.00
24. 1 Porcelain Glassed Tile		1,000,000.00
25. 1 Refractory Plant		1,000,000.00
26. Logging Equipment		22,000,000.00
27. Sawmills & Veneer Mills	2,000,000,000 bd. ft. annually	20,000,000.00
28. Finishing Mills		2,000,000.00
29. Dry Kilns		1,500,000.00
30. Treatment Plants		2,000,000.00
31. Box and Barrel Mfg.		1,000,000.00
32. Furniture Mfg.	50% increase in production valued at ₱4.4 million	2,000,000.00
33. Misc. Small Industries		
Veneer Mills		
Misc. Food Products	₱54,435,000.00 plus 50% increase	25,000,000.00
Baskets, Beds & other Wooden Products		
Hats		
Business Machine Repair		
Carpentry Shops		
Jewelry Shops		
Musical Instruments		
Photographers		
Tin Manufacturers		
Candles & Wax Products		
All other small Manufacturers		
Bakeries		
Confectionery		
Beverages		
Printing and Publishing		

SOURCE: Joint Philippine-American Finance Commission Reports, Philippine Economic Development, June 7, 1947.

ESTIMATED EXPANSION OF PHILIPPINE EXPORTS
1948 — 1952

	Target	Required Investment
1. Sugar	65,000 tons daily-800,000 tons in 1949 and full quota in 1950	₱ 50,000,000.00
2. Alcohol	96,000,000 liters	10,000,000.00
3. Coconut oil, vegetable lard & copra cake	240,000 tons coconut oil with corresponding increase of vegetable lard & copra cake	20,000,000.00
4. Coir		600,000.00
5. Desiccated coconut	54,000 tons in 1948 63,000 tons in 1949	11,500,000.00
6. Abaca & Other Fiber Products	12,000 metric tons	25,000,000.00
Ramie	1,500,000 kilograms per year	
7. Tobacco & Manufacturer	To maintain prewar levels value of production at ₱16.6 million	10,000,000.00
8. Minerals		40,000,000.00
a. Gold & Silver	Pre-war production	35,000,000.00
b. Other Minerals		5,000,000.00
9. Iron and Steel Industry		95,000,000.00
a. Charcoal production		15,000,000.00
b. Iron Mill	100,000 tons 400 tons a day	60,000,000.00
c. Industrial tools and equipment		20,000,000.00

SOURCE: Joint Philippine-American Finance Commission Reports, Philippine Economic Development, June 7, 1947.

ESTIMATED INCREASE OUTPUT OF SERVICES
1948 — 1952

	Target	Required Investment
I. TRANSPORTATION		₱1,094,000,000.00
a. Railways	30 Road Locomotives	₱ 123,000,000.00
	2 Locomotives	
	17 Switch Locomotives	
	78 Passenger Coaches	
	360 Freight Cars	
	12 Caboose Cars	
	12 Dormitory Cars	
	2 Tool Cars	
	2 Wrecking Cranes	
	3 Pile Drivers	
	8 Rail Motor Cars	
	20 Rail Motor Trailers	
	3 Service Cars	
b. Road Transports ..		₱ 545,000,000.00
1. National Roads .		
2. Provincial Roads		500,000,000.00
3. City Streets		
4. Bridges		45,000,000.00
c. Bus-Truck Lines & Motor		₱ 384,800,000.00
Motor vehicles (private)	44,000 trucks at ₱4,000.00	176,000,000.00
	7,000 buses at ₱20,000.00	140,000,000.00
	Accessories (Inc.-Tires)	68,800,000.00
d. Shipping		₱ 49,600,000.00
	Ocean Shipping	12,600,000.00
	Inter-island shipping including tugs & barges	12,000,000.00
	Floating Drydock	25,000,000.00

e. Air-Transport	1. Extension of air-port facilities 2. Establishment of suitable communication & navigation facilities 3. Purchase of new equipment, etc.	
f. Air-Port Requirement		₱ 30,000,000.00
	5 — 3 strip at ₱870,000.00	4,300,000.00
	10 — 2 strip at ₱590,000.00	5,900,000.00
	30 — 1 strip at ₱310,000.00	9,300,000.00
	30 — 1 strip (no lights) at ₱230,000.00	6,900,000.00
	Cost of buildings	3,000,000.00
II. COMMUNICATIONS:		₱ 55,000,000.00
a. Telephone Rehabilitations		26,000,000.00
b. Wire Telegraph		20,000,000.00
c. Radio		9,000,000.00
III. POWER PLANT:		₱ 173,000,000.00
a. Hydroelectric power projects	97,000 kw. including transmission	70,000,000.00
b. Diesel	20,000 kw. — does not include transmission	8,000,000.00
c. Steam	80,000 kw. — includes 50,000 kw. in Manila & distribution & change from 220 volts to 110 volts	95,000,000.00

SOURCE: Reports of Joint Philippine-American Finance Commission, Philippine Economic Development, June 7, 1947.

ESTIMATED INVESTMENTS FOR CONSTRUCTION
1948 — 1952

	ESTIMATED REQUIREMENT
I. TITLE — I, Philippine Rehabilitation Act	₱ 800,000,000.00
a. Payment of claims of 1,000 pesos or less	500,000,000.00
b. For repairs and reconstruction of large commercial and industrial properties	300,000,000.00
II. TITLE — III, Philippine Rehabilitation Act	
a. For repairs and reconstruction of Public Buildings, School buildings, roads and bridges, wharves and dock[a] .	330,000,000.00

SOURCE: Report and Recommendations of the Joint Philippine-American Finance Commission, Philippine Economic Development, June 7, 1947.

[a] Includes the sum of ₱90 millions contributed by the United States Road Administration.

CHAPTER IV

THE GOVERNMENT PROGRAM OF ECONOMIC REHABILITATION AND DEVELOPMENT OF 1948[1]

A. Introduction

Believing that it would take time before domestic financial resources could be mobilized to give full support to planned economic development activities, the Philippine Government, following the recommendation of the Joint Philippine-American Finance Commission, applied with the International Bank for Reconstruction and Development for a loan to finance the foreign exchange requirements of its hydro-electric power and fertilizer projects. These projects are believed so vital to increasing food production, accelerating the rate of future development and to improving the costs of existing industries that their implementation should be undertaken as soon as possible. They are considered particularly appropriate for foreign financing because such a large portion of their costs is in dollars and because they lend themselves naturally to long-term amortization.

In the process of negotiation, the experts of the International Bank reviewed the Government's short-term program of rehabilitation and development extending over a five-year period and covering projects both public and private, some of which were already in progress of construction at the time. This program was pronounced by the World Bank "to be well conceived." Its manpower requirements could be met with proper training and guidance on an adequate scale; its local currency requirements were considered within the capacity of the economy so far as the percentage of investment to national income was concerned. However, it was recognized in this connection that a great deal of importance attaches to the success of the mechanisms set up to assure this proportion of savings. With respect to the foreign exchange requirements, the World Bank agreed that beginning in 1951 it might be necessary to resort to external borrowing to avoid drawing excessively upon the currency reserve which at that time was still at a fairly high level.

B. Objective and Scope

The aim of this program is to adjust the economy to and to cushion the impact upon it of the decline in United States Government payments by 1951 and the progressive application of American tariffs on Philippine exports after 1954. It was conceived as the initial stage in a process of structural adjustment to free the national economy from too great a dependence on a few export crops and to fortify it better against the severe fluctuations and demand and prices of these crops in the foreign markets by increasing the local production of foodstuffs, by extending productive activity from raw material production to industrial processing and by enlarging the scope and possibilities of internal distribution through improved and augmented transportation and communication facilities. It embraced also the rehabilitation and development of light industries and a modest housing program.

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[1] See Report of Hon. Miguel Cuaderno, Sr., Secretary of Finance to His Excellency Elpidio Quirino, President of the Philippines, 1948 and appendices attached thereto.

In view of the close proximity of the crucial years 1951-1954 and the limitations on available financial resources, the selection of projects for the program was limited mainly to those that are calculated to enter the production stage and yield returns on investment within a relatively short period of time, except for a few projects that are considered essential bases for further development such as the hydro-electric power projects. For this reason and in view of the wise decision to be guided in Philippine industrial development planning by the programs being implemented in other countries of this region, heavy industries that would involve big investments in imported equipment and appeared highly complex were postponed. The attainment of a stable equilibrium in the balance of payments at the end of the five-year period was not envisaged but it was presumed that if the projects included were carried out successfully, the resulting improvements in the productive capacity of the economy should produce ultimately such a position.

It was expected that many of the projects would be undertaken by private enterprise and full recognition was given to the desirability of encouraging as wide a participation as possible of private capital. On the other hand, believing that not all of the projects could be financed by private enterprise, provision was made for government participation either by direct investment or in combination with private management.

The program embraced investments in agriculture, industry, mining, transportation and communications, public works and housing. 12 agricultural projects were proposed; namely, rice, sugar, abaca, corn, coconut, tobacco, peanuts, ramie, jute, forest products, livestocks and fisheries. The industrial segment consisted of 35 industrial projects, 5 of which were in progress of construction, 14 were firm and with complete studies, 10 were in advanced stages of planning and 6 were in preliminary stages of planning. 10 projects were listed in the field of mining, 5 in transportation and communications and 9 in public works. Also included was a rough description of the investment requirements in housing, covering both residential and commercial buildings.

C. Financing

Total capital requirements were estimated in the neighborhood of ₱1,849 million, ₱967 million of which represented peso requirements and ₱882 million, foreign exchange requirements. These were tentatively distributed over a five-year period as follows:

Peso Requirements:	1949	1950	1951	1952	1953	Total
			(Million Pesos)			
Agriculture	₱ 60.7	₱ 79.1	₱103.8	₱ 97.9	₱ —	
Industry	121.7	132.4	161.5	111.7	98	
	₱182.4	₱211.5	₱265.3	₱209.6	₱ 98	— ₱967

Foreign Exchange Requirements:

	1949	1950	1951	1952	1953	Total
			(Million Dollars)			
Agriculture	$ 25.9	$ 25.5	$ 17.2	$ 14.1	$ —	
Industry	89.5	79.8	88.3	57.4	43	
	$115.4	$105.3	$105.5	$ 71.5	$ 43	— $441

In addition it was estimated that 15 percent should be added in 1949 and 20 percent in 1950 to cover the operating capital required by projects which enter the production stage in those years.

To finance the program, reliance was placed on a number of sources of capital. Considering the healthy rate of growth in savings and in investments in corporations, partnerships and individual proprietorships, it was hoped that the private sector would be able to provide a substantial proportion of the funds required. The prospects of increasing private savings were bright in view of the filling up of wartime scarcities. The establishment of more branches of commercial banks in outlying provinces and the establishment of the Central Bank were expected to lead to an increase in funds channeled into the banking system from private hoards and their investment in private and government securities. These securities would also provide insurance companies with an important outlet for investment of their reserves.

The effective sources of government development funds would be the proceeds of domestic borrowing from the public and from the commercial banks and limited borrowing from the Central Bank. Tax revenues could not be relied upon because in spite of increases in government revenue that had been attained by introducing new taxes, raising existing rates, and improving tax collection, the resources of the Government had been and would be used to the full in expanding necessary government services such as education, which was seriously neglected during the war, and in financing a considerable amount of government reconstruction, particularly school buildings, hospitals, roads and bridges, irrigation systems, etc. Although the long range prospects are bright, it was doubted whether substantial amounts could be raised immediately via domestic borrowing in view of the fact that the development of a government securities market is necessarily a slow process and considerable educational work had to be undertaken by the Central Bank in order to create such a market. Inasmuch as the funds derivable from taxation and domestic borrowing would be inadequate to meet the full requirements of the rehabilitation and development program it would be necessary to resort to a limited amount of direct borrowing from the Central Bank under Section 137 of the Central Bank Act, according to which not more than ₱200 million may be advanced by the Bank for productive and income producing projects till 1951. This amount would be used in the form of direct investments by the Government in rehabilitation and development projects and in the form of loans to the Rehabilitation Finance Corporation to support private enterprises to the greatest extent possible in projects that they might be willing to undertake.

The flow of private foreign capital into the Philippines has been limited but encouraging. Several private industrial plants were rehabilitated with the aid of foreign capital such as desiccated coconut plants, coconut oil mills, sugar mills, lumber mills, an organization engaged in pineapple growing and processing, power installations of the Manila Electric Company and installations of the Benguet Consolidated, a mining company.

D. Administration

It was proposed that the overall supervision of the program be lodged in the hands of a full time economic coordinator working with the appropriate staff and facilities directly under the National Economic Council. The coordinator would keep under continuous review the implementation of the projects authorized from time to time, review project plans submitted for approval including those proposed by private enterprise seeking effective government assistance, and would supervise the allocation and release among different projects of funds made available from time to time for economic development purposes.

E. Survey of Manpower Resources and Requirements

Summary[1]

A survey of available and prospective manpower resources was made in connection with the Government economic development program of 1948. An estimate of the requirements of the different segments of the program was formulated and assessed in the light of available resources. The survey concluded that the total increase in manpower requirements in primary, secondary and tertiary industries between 1939 and 1952 would be roughly 1 million persons and in the same period the aggregate increase in the labor force would be 2 million persons. It also concluded that there is likely to be no absolute manpower shortage. The manpower problems that would confront the investment program would be those of vocational training and proper geographical distribution of manpower resources.

The population of the Philippines is expected to increase from 16 million persons in 1939 to roughly 21.9 million in 1952, based on major changes in age and sex composition of the population was not expected and it was assumed that the potential labor force would increase proportionately. In the course of 9 years from 1939 to 1946 there was an increase of approximately 1.6 million or an annual increase of slightly under 180 thousand. On this basis the potential labor force could be expected to rise from 5.4 million in 1939 to 7.4 million in 1952. The combined increased manpower requirements under the investment program would not exceed 1 million workers.

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[1] See appendices

I. Estimated Increases in Population and Labor Force

	1939	1947	1949	1952
	(Actual)	(Estimates)		
Total Population	16,000	19,511	20,425	21,880
Total Labor Force[1]	5,321	6,497	6,822	7,329

II. Estimated Manpower Requirements[a] (In Thousands)

	1939	1947[b]	1949	1952
	(Actual)	(Estimates)		
I. Primary industries	3,669	3,182	3,611	4,033
Rice	1,728	1,566	1,574	1,600
Corn	666	593	601	613
Coconut	297	297	297	297
Sugar	217	20	174	243
Abaca	159	86	100	126
Tobacco	60	35	35	60
Livestock	21	8	11	18
Fishing	181	239	456	645
Forestry	127	26	29	50
Other	313	312	334	381
II. Secondary industries	641	891	952	1,063
Construction	94	122	122	106
Industry proper	77	195	230	314
Handicraft	423	520[c]	545[c]	586[c]
Mining and quarrying	47	54[c]	55[c]	57
III. Tertiary industries	1,011	1,234[c]	1,296[c]	1,393[c]
TOTAL MANPOWER	5,321	5,307	5.859	6.489

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[1] Adjusted to exclude housewives.

[a] Based on the requirements of the Philippine economic investment program of 1948 — requirements exclude most female workers.

[b] Low requirements due to war disruption.

[c] Actual estimates not given in the survey but computed on the basis of a growth proportionate to the population. The proportion of the following groups to the adjused total labor force in 1939 are as follows:

> Handicraft — 8%; tertiary industries, 19%; mining and quarrying on the basis of an annual increment of 763 persons a year or a total additional requirement of 10,000 laborers from 1939 to 1952.

1. The Characteristics and Attributes of Philippine Manpower

The occupational distribution of the Philippines revealed the predominantly agricultural character of the economy. Out of the total 6,873,007 gainful workers[1] in 1939, 5,008,647 or almost three-fourths were engaged in agriculture. Of the total labor force, 76 percent were in primary industries — which include agriculture, forestry and fishing; 9.4 percent, in the secondary industries (manufacturing, mining and construction); and 14.7 percent, in tertiary industries (professions, services, finance, utilities, domestic, etc.).

The dearth of processing industries in the Philippines was amply illustrated by the fact that only 9.4 percent of the labor force were engaged in secondary industries. There was an almost complete absence of what might be called "industry proper" in the full sense of the term under conditions of modern industrialism. A substantial portion of those engaged in handicrafts carried them on as a supplementary occupation to compensate for the heavy incidence of agricultural underemployment and the resulting low incomes. The tertiary industries accounted for 14.7 percent of the total labor force. Although better represented than secondary industries, they nevertheless fell short of what might be regarded as a normally desirable level because of the lack of enough secondary industries and the low income level of primary industries.

Only personal services which gave employment to 4.8 percent of the labor force may be said to have attained a proportion corresponding to their appropriate role in a properly balanced economy.

2. Manpower and the Investment Program

a. Manpower in primary industries:

In 1939, fully half of the non-agricultural manpower was engaged in the production of rice. The remaining half was distributed among eight major pursuits as well as miscellaneous farm pursuits in the following proportion: rice (palay), 52.8 percent; corn, 19.7 percent; coconut. 8.9 percent; abaca, 4.3 percent; sugar cane, 5.0 percent; tobacco, 1.7 percent; fruit, 0.4 percent; livestock and poultry, 0.5 percent; and others, 6.7 percent. Considerable seasonal agricultural unemployment is believed to have existed in the economy as rice farming and some branches of agriculture do not absorb more than three-fourths of the farmers' time in the course of a year. Many of the small farms could have been adequately attended to even if a substantial reduction in the existing agricultural labor force were effected. The other two primary industries, fishing and forestry, engaged 2.6 and 0.4 percent, respectively, of the total labor force.

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[1] Included housewives.

Primary industries gave employment to three-fourths of the labor force before the war and its postwar labor requirements continue to loom large in the Philippine economy. Based on a constant ratio of manpower to output, the manpower requirements in 1952 of Philippine agriculture, fishing and forestry, are estimated at 4,033,000 compared with an actual figure of 3,669,000 in 1939. On the other hand, the supply of manpower for this primary pursuit in 1952 is estimated roughly somewhere at 5 million yielding a surplus in the order of magnitude of 1 million persons. The surplus of 1 million workers which is expected to exist by 1952 is the result of the growth in population and the resultant increase in the size of the labor force. An estimate of the surplus in 1952 would have to take cognizance of the several forms of unemployment which existed among agricultural workers in the Philippines in 1939. There were about 130 thousand reported as unemployed. To this number must be added a considerable volume of seasonally unemployed agricultural manpower. Data on additional occupations suggest that a considerable number of seasonally unemployed labor remained unutilized and the low per capita real income in Philippine agriculture suggested that a substantial volume of unemployment prevailed. The manpower that could have been withdrawn from agriculture without adversely affecting total farming output is substantial.

The widespread prevalence of agricultural underemployment is somewhat alleviated by supplementary gainful pursuits. A large proportion of farm manpower is engaged in supplementary pursuits in other types of farming or in somewhat more removed spheres of the economy. There is a great deal of room for expanding the scope of additional occupations, particularly in the construction field. Since the dry season is a slack season for rice growing, the use of farm manpower for ready construction and other types of building activities was recommended to cope with the needs of this labor intensive industry. Similarly, the location of food processing plants in localities with seasonal labor surpluses was given as an important step in solving food requirements on some domestic industries.

b. **Manpower in secondary industries:**

The anticipated surplus of 1 million workers in primary industries would more than suffice for the realization of the investment plans in construction, mining and industry proper. The total volume of employment in these fields in 1939 amounted to only 65 percent of the estimated manpower surplus. However, the successful implementation of the overall investment program will require large numbers of skilled construction workers as well as of properly trained operation and maintenance crews. The most important single group of skilled workers that must be readily made available to the development program consists of the construction trades, which was considered to be a critical one both from the standpoint of timing and of training. The construction labor force in 1946 of 125 thousand would have to be brought up to 136 thousand by 1951. A total of about 24 thousand trained workers or at the rate of 8 thousand a year increase is required between 1946 and 1951.

The operation and maintenance of "industry proper" is expected to require more workers by 1952. The establishment of some new industries as well as the expansion and modernization of others will make necessary additional manpower. There will be a need for some 314 thousand industrial workers by 1952 as compared to 234 thousand in 1938. Thus, between 1946 and 1952 some 120 thousand new industrial workers will be needed. If allowance were also made for replacement, an entry of as many as 150 thousand new industrial workers might be required. This will include some unskilled labor and some highly skilled personnel of great responsibility but mostly semi-skilled machine tenders which is one essential need of modern technology. Training plans and facilities would have to be revised for this group, and an essentially agricultural people would have to be inculcated with principles of machine maintenance. In 1939, total employment in mining and quarrying was reported at 47 thousand. Allowing both for replacement and a moderate slash in the labor force, an additional 10 thousand workers would be required in these fields by 1952.

c. **Manpower in Tertiary Industries:**

On the basis of a growth proportionate to the population, the tertiary industries would increase from roughly 1 million in 1939 to 1,350,000 in 1952. Workers for tertiary industries by 1952 were estimated, therefore, to be 1,500,000.

CHAPTER V

IMPLEMENTATION UP TO 1949

A. Approval of the Program and Release of Funds

On February 28, 1949, the National Economic Council passed a resolution recommending to the President approval of the short-term program of rehabilitation and development reviewed by the World Bank and of a list of priorities to be observed in its implementation. Top priority was given to rice, corn, fishery, fruits and other products; sugar, abaca, maguey, ramie, and other fibers; tobacco; peanuts; coconut; livestock and products; forest products; mining; land transportation; shipping and air transportation; waterpower development; small industries (nail plant, paper and pulp plant); fertilizer plants and handicrafts. Second priority was accorded to the following: water supply; port improvements; schools, hospitals, markets; housing, commercial included; highways; flood control and drainage; airports; drydock for large vessels and jute (saluyot).

It was recommended further that for the year 1949, ₱30 million of the moneys to be advanced by the Central Bank under Section 187 of the Central Bank Act be earmarked for the following projects included in the top priority list: rice and corn projects; the hemp development projects; rehabilitation of the sugar industry; the waterpower development projects (Ambuklao and Lumot); rehabilitation of ocean shipping including purchase of ocean-going vessels, coconut industry (development of coconut by-products); tobacco, nail plant installation; rehabilitation of fisheries; paper and pulp plants. The amount of 135 million was recommended to be allocated during the year to the Rehabilitation Finance Corporation for use by it solely in financing projects included in the top priority list, whether undertaken by an instrumentality of the government or by private entities. The National Economic Council, recommended also that the financing of projects, whether by direct investment or through RFC loans, be closely coordinated in order to avoid duplication and to insure that the cost estimates and the schedule of needed outlays of projects undertaken were tied up closely with the estimate of funds that might be made available from time to time either under Section 187 of the Central Bank Act or from the proceeds of domestic borrowing, after development funds provided by the Central Bank shall have been exhausted. These recommendations were immediately approved by the President.

The Monetary Board of the Central Bank approved the release of funds under Section 137 after having satisfied itself that the estimated amounts requested for the year would not endanger domestic monetary stability and after ascertaining that the dollar resources were sufficent to enable the Bank to make the requested advances to the Government. Releases made during 1949 and the first half of 1950 for projects approved by the National Economic Council during 1949 are as follows:

APPROVED PROJECTS	CAPITAL REQUIREMENT	AMOUNT RELEASED 1949	AMOUNT RELEASED JAN. 1—JUNE 30, 1950	TOTAL
I. Agricultural Projects	₱28,824,953.82	₱21,633,170.80	₱ 5,400,000	₱27,033,170.80
1. Rice and Corn projects, Rice & Corn Production Administration (RCPA) under the National Development Co.	14,190,000.00	8,790,000.00	4,400,000	13,190,000.00
2. National Abaca and Other Fibers Corporation (NAFCO) for the development of the 2,500 Has. of abaca land in Davao ______	2,634,953.82	1,843,170.80	—.—	1,843,170.80
3. Bureau of Public Works for the development of irrigation projects __	11,000,000.00	11,000,000.00[a]	—.—	11,000,000.00

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[a] Including the sum of ₱1 million to the DANR for the purchase of irrigation pumps.

	CAPITAL REQUIREMENT	AMOUNT RELEASED 1949	AMOUNT RELEASED JAN. 1 — JUNE 30, 1950	TOTAL
I. Agricultural Projects (Ct'd)				
4. Department of Agriculture and Natural Resources as a rerevolving fund for the purchase of commercial fertilizers for the distribution to farmers on credit basis [a]	1,000,000.00	—.—	1,000,000	1,000,000.00
II. Manufacturing Industries	₱10,004,800.00	₱2,206,050.00	₱ 462,500	₱2,668,550.00
5. Ilocos Textile Project under the National Development Co	2,538,750.00	900,000.00	462,500	1,362,500.00
6. Subscription to the authorized capital stock of the Philippine Electric Manufacturing Company (PEMCO) under the National Development Company.	375,000.00	375,000.00	—.—	375,000.00
7. Establishment of a small steel plant under the National Development Co.	4,500,000.00	40,000.00	—.—	40,000.00

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[a] As of May 31, 1950.

8. Establishment of a kraft paper and bag-making mill under the National Development Co.	₱ 891,050.00	891,050.00	——.——	₱ 891,050.00
9. National Coconut Corp.	1,700,000.00	——.——	——.——	——.——
III. Transportation & Public Utilities	₱31,676,000.00	₱ 6,707,230.00	₱ 8,269,846.66	₱14,977,076.66
10. Construction of three (3) ocean-going vessels in Japan under the National Development Company	14,176,000.00	4,692,000.00	4,759,668.04	9,451,668.04
11. Establishment of a national shipyard and graving dock under the National Development Company.	16,000,000.00	515,230.00	3,510,178.62	4,025,408.62
12. Subscription to the authorized capital stock of the Philippine Air Lines (PAL) for the establishment of an airplane overhaul plant under the National Development Co.	1,500,000.00	1,500,000.00	——.——	1,500,000.00

IV. Hydro-electric Power Program	₱ 5,000,000.00	₱ 1,000,000.00	₱ 2,450,000.00	₱ 3,450,000.00
Lumot Diversion Project of the National Power Corporation	5,000,000.00	1,000,000.00	2,450,000.00	3,450,000.00
V. Reimbursement to the National Development Company for its capital expenditures on development projects	₱ 2,500,000.00	₱ 2,500,000.00	₱ —.—	₱ 2,500,000.00
VI. Advances to the Rehabilitation Finance Corporation (RFC) for agricultural and industrial loans	₱ 35,000,000.00	₱20,000,000.00	₱15,000,000.00	₱35,000,000.00
GRAND TOTAL	₱113,005,753.82	₱54,046,450.80	₱31,582,346.66	₱85,628,797.46

On May 3, 1950 the National Economic Council approved another resolution embodying its recommendations on the allocation of the balance of the ₱200 million earmarked by the Central Bank for advances to the government for self-liquidating productive projects. Emphasis was laid on immediately income producing and dollar saving industries and activities. The list of allocations recommended follows:

1. TO THE REHABILITATION FINANCE CORPORATION:	₱ 51,000,000.00
a. Loans to private operators for the installation and operation of irrigation facilities	1,000,000.00
b. Loans to farmers engaged in cattle raising, dairy farming, piggery and poultry projects	5,000,000.00

c. Loans to deep-sea fishing and fishponds industry.	2,000,000.00
d. Loans to farmers for the growing and processing of citrus, coffee, cacao and other fruits...	2,000,000.00
e. Loans to abaca farmers	15,000,000.00
f. Loans to ramie, maguey and other fibers	5,000,000.00
g. Loans to coconut planters	2,000,000.00
h. Loans to tobacco growers	2,000,000.00
i. Loans for the sugar industry including by-products	7,000,000.00
j. Loans to enterprises engaged in mining including gold, manganese, iron, copper, chrome and coal mines	5,000,000.00
k. Loans to be made available to other necessary and essential industries	5,000,000.00
2. TO THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES	**₱ 11,500,000.00**
a. Advances to be used as revolving funds for installation and operation of irrigation facilities including pumps, dams and canal	4,000,000.00
b. Advances to be used as revolving funds for purchase and resale of fertilizers to farmers on credit	5,000,000.00
c. Advances to be used as revolving funds for the establishment and operation of seed farms for rice and other food crops	1,000,000.00
d. Advances to be used as revolving funds for the production of such food products as jams, jellies, and other preserves and for the manufacture of ham, sausages and other livestock products	1,000,000.00
e. Advances to be used as revolving funds for the establishment of seed farms and nurseries for abaca, saluyot, ramie and others	500,000.00
3. TO THE NATIONAL DEVELOPMENT COMPANY .	**₱ 3,000,000.00**
a. Development of fishing industry	3,000,000.00
4. TO THE NATIONAL POWER CORPORATION:	**₱ 26,000,000.00**
a. For the construction of the Maria Cristina Projects and fertilizer plant	16,000,000.00
b. The construction of the Ambuklao hydro-electric Project	10,000,000.00

5. TO THE NATIONAL COCONUT CORPORATION: . . .	**₱ 500,000.00**
a. Advances for its productive projects particularly for the improvement of copra and other coconut products	500,000.00
6. TO THE NATIONAL TOBACCO CORPORATION: . . .	**₱ 500,000.00**
a. Advances for self-liquidating projects in tobacco production (tentative, for further study)	500,000.00
7. TO THE NATIONAL LAND SETTLEMENT ADMINISTRATION:	**₱ 2,000,000.00**
a. Advances for the operation of its agricultural projects	2,000,000.00
8. TO THE PHILIPPINE REHABILITATION AND TRADE RELIEF ADMINISTRATION:	**₱ 1,500,000.00**
a. Advances to be used as a revolving fund for the purchase and sale of agricultural machinery, implements, and spare parts and thereby enable the said Administration to continue the activities heretofore undertaken by it with respect to UNRRA agricultural equipment, implements and spare parts	1,500,000.00
TOTAL ALLOCATIONS	₱ 96,000,000.00

Of the above allocations the President has approved so far only the following:

National Power Corporation —	
Maria Cristina project	₱ 16,000,000.00
Ambuklao project	10,000,000.00
Rehabilitation Finances Corporation —	
For abaca loans	5,000,000.00
For tobacco loans	1,000,000.00
	₱ 32,000,000.00

On May 11, 1950 the Monetary Board approved releases of funds for these purposes from time to time.

B. Rehabilitation and Development Activity Since 1946

1. Private Investment

The economic rehabilitation and development program of the Government is a planned extension over a five-year period of the reconstruction activity that has been going on since 1946. As already stated, this program included a number of agricultural and industrial projects which at the time of its review by the World Bank in 1948, were already in progress of construction and have been finished since. Since liberation rehabilitation and economic development activity in the Philippines has been pursued at a pace which enabled the country to attain a satisfactory rate of recovery.

The range of agricultural and industrial enterprises which have been re-established since the war is wide and varied. When the evidence available on the recovery that has been accomplished is weighed objectively, taking into account the prolonged disinvestment suffered by the economy during the war, it appears preponderantly that the government and the people of the Philippines have not dissipated the opportunities and the resources that the postwar years offered them but used an overwhelming proportion of these resources in reconstructing and piecing together their shattered economy.

A good sample of the types of productive activities that have been revived largely through investment of private funds and loans granted by the commercial banks and the Rehabilitation Finance Corporation is provided by the records of the Philippine National Bank and the Rehabilitation Finance Corporation.

Industrial loans granted by the Philippine National Bank from 1946 to the middle of June 1949 amounted to ₱108.5 million. ₱23.6 million of this amount went to overland transportation, ₱9.6 million to shipping, ₱400,000 to rice milling, ₱4.8 million to the lumber industries, ₱6.4 million to shoe manufacturing, ₱1 million to coconut oil manufacturing, ₱23.9 million to construction, ₱510,000 to the manufacture of hollow blocks, ₱11.1 million to cement manufacturing and ₱27.3 million to sugar production. In addition, agricultural loans extended to support recovery in the production of various crops such as sugar, palay, coconut, corn, abaca, tobacco, other products and fish ponds amounted to a substantial total. As of December 31, 1948 over ₱92 million of these loans were outstanding. Of this amount ₱51.3 million was for sugar, over ₱27 million for palay, ₱4.7 million for coconut, ₱4 million for corn, ₱2.3 million for fish ponds, ₱89,000 for abaca, ₱275,000 for tobacco, ₱2.5 million for other products

The Rehabilitation Finance Corporation since January 2, 1947, when it began operations, up to November 30, 1949, has released total loans amounting to ₱178.3 million out of corporation funds and ₱58.6 million out of trust funds in its possession. Details of these loans are given in the following tables:

	APPROVED	RELEASED	
Investments — Corporation Proper:			
Agricultural loans	₱ 38,279,870.00	₱ 33,270,383.26	
Industrial loans	78,336,200.00	71,860,180.13	
Real Estate loans	81,799,230.00	73,980,669.48	
Net transfers of real estate loans to Trust Funds	(15,512,390.22)	(15,512,390.22)	
Government loans	9,616,790.00	5,333,277.15	
Loans for landed estates	9,747,704.00	8,464,863.53	
Stocks and loans, financial institutions	1,400,000.00	928,400.00	
TOTALS	₱203,667,403.78	₱178,325,383.33	₱178,325,383.33
Investments — Trust Funds:			
Real estate loans	₱ 53,603,100.00	₱ 43,094,496.55	
Add: Transfers of real estate loans from Corporation proper	15,512,390.22	15,512,390.22	
	₱ 69,115,490.22	₱ 58,606,886.77	₱ 54,606,886.77
			236,932

Agricultural loans

According to products financed, the agricultural loans were distributed as follows:

	NUMBER	AMOUNT APPROVED
Palay	2,754	₱ 18,421,570
Corn and other staples	554	2,222,120
Coconut	903	4,321,580
Sugar	437	7,110,500
Abaca	275	2,351,270
Ramie	13	140,500
Tobacco	40	198,860
Rubber	1	40,000
Orchard	355	1,354,050
Fishpond	198	1,867,520
Salt	21	103,100
Piggery	2	6,600
Poultry	6	17,200
Dairy farm	1	125,000
	5,560	₱ 38,279,870

Industrial loans

The industrial loans assumed the following pattern:

	NUMBER	AMOUNT APPROVED
For factories:		
Rice mill and rice projects	117	₱ 3,048,745
Oil mill and coconut products	4	1,019,500
Sawmill and logging	40	3,885,346
Fishing	20	888,000
Mining	4	1,868,910
Weaving, shirts and pants factory	2	58,000
Woodwork and furniture factory	8	926,403
Cement, stone quarry and lime manufacture	7	7,078,200
Cement products, sand and gravel, ceramics, plaster boards, etc.	15	1,735,300
Oxy-acetylene plant and bottled gas	2	380,000
Bakery	5	139,000
Machine shop, foundry, and nail factory	9	365,886
Tannery and shoe manufacture	5	232,800
Pharmaceutical products	5	176,000
Soft drinks manufacture	2	22,000
Patis and bagoong manufacture	4	107,500
Soap, floorwax, polish and paints	3	59,000
Printing press	5	88,000
Livestock, poultry and dairy products	16	170,400
Pulp and paper, starch and button manufacture	3	976,111
	276	₱ 23,225,100
For sugar centrals:		
Sugar central mills	9	₱ 30,585,000

	NUMBER	AMOUNT APPROVED
For utilities:		
Air transportation	1	₱ 8,000,000
Land transportation	16	3,502,300
Shipping	9	2,874,000
Electric plant	29	2,731,500
Ice plant and cold storage	17	1,218,300
Hydroelectric power	1	1,200,000
Water system	1	5,000,000
	74	₱ 24,526,100

The total amount of ₱135,402,330 real estate loans approved went to the construction of 7920 residential buildings and 613 commercial edifices.

The approved Government loans for self-liquidating projects were classified as follows:

	NUMBER	AMOUNT
For markets and slaugterhouses	86	₱ 7,750,790
For waterworks	7	726,000
For electric systems	1	790,000
For toll bridges	1	350,000
	102	₱ 9,616,790

The loans granted to the Rural Progress Administration for the purchase, subdivision and resale of landed estates follows:

	NO. OF LOANS	AMOUNTS	NO. OF ESTATES	AREA (HECTARES)
Bataan	—	1,250,000	1	7,855.6193
Bulacan	2	172,000	3	141.5525
Laguna	1	967,706	2	889.8616
Manila	2	3,423,928	3	64.0600
Rizal	1	2,164,050	4	107.7324
Tarlac	1	1,770,020	1	3,396.8824
	7	₱9,747,704	14	12,455.7082

New purchases of stocks and loans for the rehabilitation of four building and loan associations amounted to ₱1,400,000.

During the 12-month period December 1, 1948 to November 30, 1949, the objective, scope and trend of lending operations of this corporation have been described by the Chairman of its Board of Governors, as follows:

> "The trend of the loaning operation for the previous year has been towards more emphasis in the granting of agricultural and industrial loans. Up to last year, the agricultural loans represented 12.88% of total loans, whereas for the last twelve months the percentage has been incerased to 16.08%. Similarly, industrial loans which were 27.20% of the total up to November 30, 1948, were upped to 31.34% during the last twelve months. On the other hand real estate loans, which continued to be 50.79% of the total up to November 30, 1948, were reduced to 47.65 during the last twelve months. It is desired, however to explain that 72.54% of real estate loans in this period were granted from the Trust Funds under the administration of the Corporation which are loaned for investment purposes in accordance with the law governing these Trust Funds and not for the purpose of promotion of real estate. . . . . . While there appears to be a concentration of loans in real estate construction, it is desired to state that it has not been the policy of this Corporation to encourage real estate more than agricultural and industrial pursuits. This happened only because at the beginning, while agricultural loan applications were slow in coming in, it was thought advisable to employ as much as possible the funds of the Corporation in alleviating the acute housing shortage then prevailing, with the intention that as soon as Trust Funds were accumulated, investments in real estate loans would be absorbed by the Trust Funds and those granted from the Corporation proper would be transferred to the Trust Funds."

2. Capital Expenditures of the National Government.

Since liberation, the National Government has invested a substantial amount of funds in the restoration and rehabilitation of public services. These funds were over and above those made available by the United States Government through the War Damage Commission, the United States Public Roads Administration, the Army Corps of Engineers, and other United States Government agencies in the Philippines. From fiscal year 1945 to fiscal year 1949, the Government spent the amount of ₱325,109,332.13 for public works projects and for loans, advances and investments and other financial aid to revive commerce and industry. For public works projects alone the Government spent ₱151,599,669.42. Advances to various government corporations, purchase of shares of preferred stocks in banks and domestic insurance companies, and other aid to revive commerce and industry amounted to ₱173,509,662.71.

3. U. S. Government Expenditures in the Philippines.

Of the amounts which the United States Government has spent in the Philippines from July 1, 1945 to December 31, 1949, amounting to $1,637.5 million, only a small portion became available for subsequent appropriation by the Philippine Government itself. In this category belongs the budgetary loan of $60 million from the U. S. Reconstruction Finance Corporation, the cash proceeds of surplus property (the sales proceeds fell far short of the amount intended to be given by the Philippine Rehabilitation Act) amounting to $24.5 million, the coconut oil excise tax proceeds of $89.5 million and a few other small items. The greater part of the total sum spent was handled by U.S. agencies themselves and spent for the various purposes for which the funds were made available. The lack of mechanisms by which this huge amount of dollars spent in the Philippines might have been effectively regulated and channelled into rehabilitation and development projects was inherent in the Philippine Rehabilitation Act itself.

The high level of consumption which prevailed in the country in the immediate postwar period was directly traceable to the wide dispersion of money incomes in the hands of the people. In view of the extent of disinvestment that the country went through during the war and the subsequent need for making up this loss of capital at inflated postwar prices, as well as the filling up of war-created scarcities, it is doubtful whether effective quantitative control of the import level would have been politically feasible during the early years.

In writing about the balance of payments prospects of the Philippines, a staff member of the International Monetary Fund concluded in October, 1949:

> "3. At the end of the war, the Philippines possessed over half a billion dollars of foreign exchange which it was hoped would make possible the financing of a large part of the expected trade deficits of the ensuing two or three years. This would have meant that the abnormal dollar receipts accruing to the Philippines on war damage accounts would be set aside for use in the development program, particularly after 1951 when the Philippine economy would be in a position to absorb large imports of equipment. Unfortunately, during the years 1945-48, the Philippines have had trade deficits so large as to require the use of approximately all the dollar aid currently received. Moreover, the great bulk of import had been of con-

sumer goods. Though admitting that the delay in instituting import control has been costly, the Philippine Government can plead that their country was among those most severely damaged in the Great War and the deprivations suffered by their people made it politically impossible to impose restraints on the import of consumer goods. The task of directing and reorienting the economy is one of special difficulty for a country which has only recently achieved political independence (in July, 1946) and which has, therefore, had little opportunity to develop the broad and multiple skills required for such a task.

"4. In some other respects, the economic record of the postwar years has been highly creditable. Inheriting from the Japanese a heavy burden of inflation, the Philippines have managed to bring the price level down to 50 percent of what it was in the middle of 1945, without dislocating the economy. In view of the extensive damage to buildings, machinery, and roads, to the sugar and hemp crops and to other sectors of the economy, output by the end of 1948 had made an excellent recovery. Increased tax rates and improved tax collection have served to keep the budget deficits down to moderate levels. If export in 1948 were disappointingly low, this was principally a result of extensive typhon damage to the copra crop and the precipitous fall in prices in the world fats and oils market which took place during the second half of the year.

"5. The Government has been aware that rehabilitation and reorientation of the economy is urgent; it has formulated elaborate plans and has made some progress in implementing these plans. In 1948, some reform of the tax system was instituted, and at the beginning of 1949, import control regulations were put into force and a Central Bank established.

"6. The heavy consumer goods imports since the war have included various essential foods, including rice. Though a reduction of consumer goods imports might have been feasible in 1948, it is doubtful whether rice imports could have been cut. The Philippines were rice importers before the war, and while the 1947-48 rice crop was in fact equal to average prewar crops, the population in 1948 was some 25 percent larger than 1939. There is little question that the Philippines can be made more than self-sufficient in basic food supplies, but the process should be speeded up."

It had not been easy for the Philippine Government to put the Import Control Law into effect. This law was approved by Congress about the middle of 1948. Due to the prolonged public hearings requested by importers, the regulations covering goods to be placed under control and the amount to be allowed per item could not be put into effect until January, 1949. Indeed, the effort of the Government to control the outflow of foreign exchange has in a large measure been hampered by the tenacious opposition to the import control measure on the part of large foreign importers.

4. Agriculture in 1949

In order that the feasibility of the production targets set by the revised program herein outlined and the extent of the rehabilitation and development activity that has been carried on in the agricultural sector since 1946 may be fully appreciated, a brief appraisal of the agricultural accomplishments as of 1949 is essential. The position as of that year is clearly revealed by the accompanying table. Total crop production during 1949 amounted to 5.44 million metric tons, or about 98 percent of the prewar output. These consisted of 3.89 million metric tons in food crops and 1.54 million metric tons in technical or export crops. The production of food crops already exceeded the prewar output, but they amounted to only 82 percent of the per capita food requirement (excluding sugar). In the case of the technical or export crops, the 1949 production reached only 79 percent of the prewar level.

The total crop area in 1949, amounting to 4.9 million hectares, was about 97 percent of the prewar crop areage. The total area in food crops already exceeded the prewar, but the area in technical crops was only 87 percent of the prewar.

The livestock and poultry population in 1949 is estimated at 27.6 million heads, of which 6.5 million heads are large livestock and 21.2 milion heads are poultry. There are about 67 percent of the prewar number of large livestock and 76 percent of the prewar poultry population.

Fish production in 1949 is estimated at 238,000 metric tons, or about 140 percent of the 1940 fishery output.

Lumber and timber production in 1949 is estimated at 1.5 billion board feet, of which 492 million board feet is lumber and 1,047 million board feet, timber. Timber production is 116 percent of the prewar output and lumber, 147 percent of the prewar.

5. Industry in 1949

Investment in industrial projects during 1949 was also encouraging although the overall level of industrial investment did not reach the magnitude alloted to this sector by the government development program of 1948. This is the conclusion to which the survey of actual investments made in industry, mining, transport and communications and public works during 1949 points. The survey however is a limited one and must have understated the true amount invested during the year.

Based on the record of loans granted to agriculture in 1949 by the Rehabilitation Finance Corporation, the Philippine National Bank and the National Treasury, and allowing for investment from private sources and the part of loan proceeds used in direct consumption, the capital invested in agriculture during the year amounted probably to around ₱85 million. Actual investment during 1949 in industry, mining, transport and communications and public works, as revealed by the limited survey made recently by the Central Bank, amounted to a total of about ₱184 million. The total of these amounts or ₱269 million, if reduced by the amount of advances released by the Central Bank during the year for economic development projects (a little more than ₱54 million) would give a difference of ₱215 million representing the probable amount of new capital formation from sources other than the Central Bank during the year. This compares favorably with the rate of about ₱200 million (based on 4.5 percent of a national income of ₱4 billion) expected for this economy.

One encouraging element revealed by the survey is the fact that investments have been made in almost all the projects (except a few highly complex ones) classified in the development program as projects in progress of construction, projects for which studies are complete, and projects in advanced stages of planning.

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APPENDICES TO CHAPTER V

SURVEY OF INDUSTRIAL INVESTMENTS IN 1949

SUMMARY	1949 ACTUAL INVESTMENT
1. Projects classified in the Program as in Progress of Construction	₱ 12,478,179.00
2. Projects classified in the Program as Firm, for which studies are complete	15,925,598.00
3. Projects classified in the Program as in Advanced Stages of Planning	7,975,255.00
4. Projects classified in Preliminary Stages of Planning	—
5. Projects not specifically included or mentioned	49,288,162.00
6. Mining	10,931,685.00
7. Transportation and Communications	49,468,725.00
8. Public Works	38,225,162.97
Total....................	₱ 184,292,766.98

GENERAL NOTES:

Investments in manufacturing industries, transportation and communication, mining and quarrying, public works, and fishing industry, in 1949, have been gathered from primary and secondary sources. At the initial stages of the investigation, only new industries established in 1949 were considered. As the survey progressed some exisiting industries were also investigated for additional or increased investments in 1949. However, the difficulty of covering all establishments existing in 1949, which are estimated at over 4,000, has resulted in the incompleteness of many of the industries covered in the investigation.

The total actual investments by industries are tabulated against the estimates appearing in the Government economic development program, classified into private and Government investments. Where no estimates are given in the program, the industries for which actual investments were obtained were separately listed.

The working capital of firms existing in 1949 and for which actual investments were reported, have not been included in actual investments. For firms which were covered in the survey it was assumed that actual investments in 1949 were measured by the increase in fixed assets and/or investments.

Some of the industrial establishments which have been directly surveyed had reported production capacity, but others did not report any capacity. The number of plants for each industry could not be exactly determined because in some cases the actual investments were taken from the loans granted by the Rehabilitation Finance Corporation and the Philippine National Bank. Employment figures are also inadequate because the information submitted by the various establishments are incomplete.

PHILIPPINE INDUSTRIAL PROJECTS
A. PROJECTS IN PROGRESS OF CONSTRUCTION IN 1948

	ESTIMATED INVESTMENTS PRIVATE	GOVERMENT	ACTUAL, 1949
Plywood	₱ 300,000	———	₱ 463,121[1]
Bottles	5,000,000	———	8,000,000[2]
Paper	———	₱3,600,000	3,890,058[3]
Nail Manufacturing	———	500,000	125,000[4]
Knit Mills	900,000	———	———[5]
Totals	₱6,200,000	₱4,100,000	₱12,478,179

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[1] *Plywood.* — There are known four (4) firms which are engaged in the manufacture of plywood, namely:

a) Sta. Clara Lumber Co.
b) International Hardwood and Veneer Co.
c) Philippine Plywood Co.
d) Woodworks, Inc.

This report includes only two firms, namely:

Total	₱463,121
Sta. Clara Lumber Co.	₱ 87,478
International Hardwood & Veneer Co.	375,643

[2] *Bottles.* — The total amount of ₱8,000,000 is that of San Miguel Glass Factory with a capacity of 1,600,000 (11 oz.) bottles daily.

[3] This includes investments in paper, wall boards and paper containers of the following private firms:

Total	₱3,890,058
Compania de Cellulosa de Filipinas, Inc.	₱ 947,008
San Miguel Carton Plant	1,500,000
Chua Tec Corporation	188,000

Pioneer Paper Products, Inc.	90,000
Chu Chi Ho and Co.	50,000
C. Nazario and S. Bangcaya Co.	20,000
Luzon Cigarette Paper Factory	4,000
Oriental Corrugated Cardboard	200,000

The investment of the National Development Co. in a Kraft paper and bag making project of ₱891,050 is also covered.

[4] Out of the reported 35 nail manufacturers this figure includes the investments of only two firms:

Total	₱ 125,000
Marcelo Steel Corp.	₱ 100,000
Philippine Nail Factory	25,000

[5] The survey of increases during 1949 of investments in this industry has not yet been made.

PHILIPPINE INDUSTRIAL PROJECTS

B. PROJECTS WHICH WHERE FIRM ON WHICH STUDIES ARE COMPLETE IN 1948

	ESTIMATED INVESTMENT		
PROJECT	PRIVATE	GOVERNMENT	ACTUAL, 1949
Lamps	₱ 1,130,000.00	₱ 1,500,000.00	₱ 1,536,950.00[1]
Wall board	2,000,000.00	———	——— [2]
Windows	700,000.00	———	571,625.00[3]
Paper containers		1,000,000.00	——— [2]
Agricultural Equipment		800,000.00	459,186.00[4]
Textiles		4,200,000.00	1,740,685.00[5]
Barrels	———	570,000.00	——— [6]
Ice Plants	900,000.00	———	1,168,870.00[7]
Furniture	350,000.00	———	482,500.00[8]
Miscellaneous	3,200,000.00	———	4,727,148.00[9]
Fish		600,000.00	184,758.00[10]
Stream	4,600,000.00	———	4,600,000.00
Gas	———	2,700,000.00	433,876.00[11]
Embroidery	800,000.00		20,000.00[12]
Total	₱13,680,000.00	₱11,370,000.00	₱15,925,598.00

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[1] *Electrical lamps.* — The PEMCO (Philippine Electrical Manufacturing Co.) is the first electric lamp factory in the Philippines. The actual investment in 1949 was one million and a half pesos and the major stocks are owned by San Miguel Brewery, A. Soriano & Co. The National Development Company is also a substantial subscriber.

[2] Investment in this industry during 1949 was included in the reported investments for paper.

[3] *Steel windows.* — The Mayon Steel Window, with an initial capital of ₱571,625 in 1949, is the only firm reported manufacturing steel windows. Other firms producing the same product have not yet been surveyed.

[4] *Agricultural equipment.* — Iloilo Plow and Harrow Factory reported a new investment of ₱5,000 in 1949. The Machine and Equipment Department of NDC had an increase in fixed assets of ₱454,186.

[5] *Textile mills.* — No private investments have so far been investigated. The government investments are for the spinning plants in Narvacan, Ilocos Sur, and the NDC textile mills.

[6] *Barrels.* — So far no firms are known to have increased their investments. There were no new firms in 1949.

[7] *Ice Plants.* — Of the total number of ice plants authorized to operate by the Public Service Commission, only 68 reported their operations for 1949. The coverage of ice plants is therefore still inadequate in order to have a fairly representative picture of increased investments in ice plants.

[8] *Furniture.* — Thirteen (13) new firms in 1949 reported their investments. The increased investments of already established firms prior to 1949 have not been surveyed.

[9] This item contains the following:

	₱4,727,148
Coconut oil and By-Products	874,613
Candies	200,000
Toiletries	304,375
Drugs & Cosmetics	458,260
Cigar and Cigarettes	525,500
Sugar, Moll	50,000
Boats, Ships and Launches	2,500
Sausages and Hotdogs	30,000
Vegetable Oil	45,000
Glassware	17,000
Plastic	15,000
Iron Works	177,000
Apa	40,000
Toys	10,000
Dried Fish	10,000
Hats	25,800
Soil Pipes	5,000
Patis and Bagoong	55,000
Starch	1,273,200
Bakery	458,900

[10] *Canned and preserved fish and other sea foods.* — Under this industry only the National Food Products Corporation, a Government enterprise, was included. Increase in fixed assets of this corporation for the fiscal year 1949 was taken as the increase in actual investments. Private firms were not directly surveyed.

[11] *Gas.* — The original project for which estimates were made was the rehabilitation of the Manila Gas Co. which served metropolitan Manila before the war. This is now abandoned.

The firms covered in the survey produce bottled gas:

Inter-island Gas Service, Inc.
Pacific Gas and Acetylene, Inc.
Standard Vacuum Oil
Overseas Gas Corporation

The aggregate investment of ₱433,876 is understand because some other firms have not yet been investigated.

[12] *Embroidery.* — The embroidery business in the Philippines, which contributes from 5 to 8 million dollars annually to the Philippine coffers and which gives steady employment to approximately 200,000 peoples, is operating on a basis different from ordinary manufacturing firms. There are sixteen (16) embroidery firms affiliated with the Embroidery Association of the Philippines, but all of these firms started operation prior to 1949. There are three other firms which operated before 1949 but which are not affiliated with the Embroidery Association of the Philippines. However, only one new embroidery firm was opened in 1949 with an initial capitalization of ₱20,000.00. Initial capitalization of embroidery firms was for the setting up of the necessary office firm and equipment. Raw materials, trimmings and supplies are sent from principals abroad to embroidery firms on consignment or trust receipts. These firms in turn process the materials and supplies into embroideries and ship them to their principals abroad, mostly in the United States. Dollar income from principals abroad is used by the firms to pay all expenses incident to the processing, such as labor, overhead, etc., which is charged against letters of credit opened by principals abroad. This is the nature of the embroidery business as stated by Mr. Philip E. Shaouy, President of the Embroidery Association in the Philippines.

PHILIPPINE INDUSTRIAL PROJECTS

C. PROJECTS IN ADVANCED STAGES OF PLANNING IN 1948

PROJECT	ESTIMATED INVESTMENT		
	PRIVATE	GOVERNMENT	ACTUAL, 1949
Fertilizers	₱	₱23,170,000.00	₱ [1]
Net Manufacturing		1,200,000.00	125,000.00[2]
Alcohol		8,000,000.00	
Cement		400,000.00	5,644,218.00[3]
Pasteurizing station	—	—	—
Leather	2,000,000.00		756,000.00[4]
Cutch	—	—	—
Fruits	1,000,000.00		87,855.00[5]
Hydro	15,000,000.00		1,362,182.00[6]
Miscellaneous handicrafts	900,000.00		— [7]
	₱18,900,000.00	₱32,770,000.00	₱7,975,255.00

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[1] *Fertilizer.* — No information is available on investments in fertilizer (plants) during 1949.

[2] *Fish net manufacture.* — Only two firms, Superior Manufacturing Co. and Fish Net Factory, were established in 1949. Other existing firms have not been investigated.

[3] This includes the following firms:

Total	₱ 5,644,218.00
Philippine Portland Cement Co.	230,000.00
Cebu Portland Co.	5,414,218.00

[4] *Leather.* — Only one firm, viz., Tan Chian Biot Yu Eng Han, with an investment of ₱20,000, was organized in 1949. The loans granted by PNB to shoe makers was ₱705,000 in 1949, and this amount was considered as a part of private investments. RFC gave ₱31,000 as loans for same purpose during 1949.

[5] *Canned and preserved fruits.* — No private firm engaged in the canning or preserving fruits was covered in the survey. This figure represents loans granted by the Philippine National Bank to firms engaged in this industry.

[6] *Hydroelectric plants.* — The Government investment consisted of the increased outlay for utility plants of the National Power Corporation for the fiscal year 1949 and the release by the Central Bank of ₱1,000,000 for the Lamot Diversion Project.

[7] No survey was made of these industries.

1949 INVESTMENTS IN INDUSTRIES NOT SPECIFICALLY MENTIONED IN THE GOVERNMENT ECONOMIC REHABILITATION AND DEVELOPMENT PROGRAM

PROJECT	ACTUAL AMOUNT INVESTED
Rice Mills	₱ 4,495,659.00[1]
Beverages (non-alcoholic)	794,701.00[2]
Wines and liquors	133,887.00[3]
Sugar Centrals	14,856,682.00[4]
Oil (Development)	2,843,010.00
Steel Plant	40,000.00[5]
Electric Plants	11,705,785.00[6]
Auto Calesas	449,859.00
PU Cars	146,132.00
Taxi cabs and garage cars	1,717,316.00
Deep-sea and off-shore fishing	1,038,300.00
Unclassified mining	141,000.00
Shirts and trousers	771,000.00[7]
Sawmills	10,154,831.00[8]
	₱49,288,162.00

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[1] *Rice Mills.* — Rice mill establishments were not completely covered and the actual investments in the table represent the loans granted by the Rehabilitation Finance Corporation and the Philippine National Bank. No attempt was made to actually survey all rice mills because of the impossibility of covering each one of these mills within the time limit and limited facilities for the survey. Moreover, it is hard to determine which of the mills have already been reported as having had investments from the loans granted by the *RFC and the PNB.*

[2] *Beverages (Non-Alcoholic)* ₱ 794,701

Bireley's California Oranges, Ltd.	200,000
Cliquot Club	500,000
True Ade	94,701

[3] *Wines and Liquors* ₱ 133,887

A. V. A. Co. of the Philippines	2,809
La Estrella Distillery	5,000
Baldeseri Wine Co., Inc.	126,078

[4] *Sugar Centrals* ₱ 14,856,682

Luzon Sugar Co.	30,788
Victorias Milling, Inc.	1,030,428
Paniqui Sugar Mill, Inc.	135,445
Bogo-Medellin Milling Co., Inc.	158,521
Central Azucarera de Bais	599,397
Central Azucarera de Tarlac	583,997
Central Azucarera Don Pedro	686,704
Binalbagan — Isabela Sugar Co., Inc.	1,959,872
Sta. Aniceta Sugar Central	376,994
Central Azucarera de Pilar	218,645
Central Azucarera de la Carlota	1,870,982
Hawaiian-Philippine Company	1,743,794
Ormoc Sugar Co.	55,711
Central Santos — Lopez Co., Inc.	398,303
Asturias Sugar Central, Inc.	175,917
San Carlos Sugar Central	336,310
Pampanga Sugar Development Co.	230,088
Ma-ao Sugar Central Co., Inc.	2,132,453
The Talisay-Silay Milling Co., Inc.	102,393
Central Azucarera del Danao	129,940
Canlubang Sugar	1,900,000

[5] Used to finance necessary organizational expenses for a pilot steel plant.

[6] *Electric Plants*

Increase in fixed assets and investments of 77 electrical plants	₱ 11,705,785

[7] *Shirts and trousers manufacture* ₱ 771,000

Ong Co. & Co.	18,000
Sim Pao and Co.	40,000
Co Nay Se & Co.	27,000
Uy Kim Kee & Co.	12,000
Original Shirt Factory	10,000
Victory Thread Factory	2,000
Smart Shirt Factory	5,000
Sun Fuan Hing Shirt Factory	57,000
Universal Shirt Factory	30,000
Premier Shirt and Pants Factory	570,000

[8] Increase in investments, 1949 as reported by sawmill operators to the Bureau of Forestry.

TENTATIVE ESTIMATES OF PHILIPPINE MINING INVESTMENTS

Projects	Estimated Investments (1948)	Actual, 1949
Gold	₱12,000,000.00	₱ 5,353,125.00 [1]
Chrome	800,000.00	2,818,442.00 [2]
Copper	3,000,000.00	704,194.00 [3]
Manganese	1,200,000.00	21,862.00 [4]
Lead	——.——	——.——
Coal	1,600,000.00	938,426.00 [5]
Asbestos	300,000.00	——.——
Iron Ore	1,200,000.00	1,095,636.00 [6]
Salt	——.——	——.——
Exploration	1,000,000.00	——.—— [7]
Total	₱21,100,000.00	₱10,931,685.00

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[1] The following companies were covered by the survey:

Total	₱ 5,353,125.00
Benguet Consolidated Mining Co.	1,081,334.00
Balatoc Mining Co.	2,098,496.00
Surigao Consolidated Mining Co., Inc.	471,050.00
Mindanao Mother Lode Mining Co.	894,604.00
Atok Big Wedge Mining Co., Inc.	807,641.00

[2] This includes:

Total	₱ 2,818,442.00
Acoje Mining Co.	327,064.00
Consolidated Mines, Inc.	2,375,038.00
Misamis Chromite Company, Inc.	103,880.00
Luzon Stevedoring Co.	7,460.00
Candelaria Chromite, Inc.	5,000.00

[3] Refers to Lepanto Consolidated Mining Co. only. Total cost of the project is ₱1,000,000.00

[4] These are increases in investment. Coverage incomplete. Companies covered were:

Total	₱ 21,862.00
Palawan Manganese Mines, Inc.	4,199.00
Compania Minera de Filipinas	6,733.00
Philippine Manganese Corp.	10,930.00

[5] This includes:

Total	₱ 938,426.00
Hygrade Coals, Inc.	50,000.00
Reported by Malangas Coal Mines, NDC	888,426.00

[6] The following companies are included:

Total	₱ 1,095,636.00
Samar Mining Company	879,610.00
Marinduque Iron Mines	28,000.00
British American Engineering Corp.	10,000.00
Philippine Iron Mines	138,026.00
Atlas Iron & Steel Corp.	30,000.00
Marinduque Iron Mining Agents	10,000.00

[7] No data available immediately.

PHILIPPINE INVESTMENT IN TRANSPORT AND COMMUNICATION FACILITIES

MINIMUM ESTIMATES IN 1948

PLACE OF INVESTMENT	ESTIMATED INVESTMENTS (IN MILLIONS OF PESOS)	ACTUAL, 1949
Railroads		
Native power and rolling stock	₱ 20,000,000.00	₱ 2,915,725.00 [1]
Line repairs etc.	8,000,000.00	
Total	₱ 28,000,000.00	
(Manila RR)	(22,400,000.00)	
(Philippine RR)	(5,600,000.00)	
Shipping		
Inter-island	₱ 3,200,000.00	₱ 5,129,236.00 [2]
Overseas	9,000,000.00	4,692,000.00
Ship repairs & dry dock project	6,000,000.00	515,230.00
Total	₱ 18,200,000.00	₱ 10,336,466.00
Communication		
Telephone	7,000,000.00	₱ 2,197,289,00 [3]
Telegraph	4,800,000.00	197,401,00 [4]
Radio Broadcasting	——	269,931.00 [5]
Total	₱ 11.800,000.00	₱ 2,664.621.00
Vehicles		
Trucks	₱ 24,000,000.00	₱ 28,434,034.00 [6]
Busses	22,000,000.00	
Total	₱ 46,000,000.00	₱ 28.434,034.00
Aviation		
Aircraft	₱ 4,000,000.00	₱ 4,444,114.00 [7]
Airport and airways	2,800,000.00	673,765.00 [8]
Total	₱ 6,800,000.00	₱ 5,117,879.00
GRAND TOTAL	₱110,800,000.00	₱ 49,468,725.00

[1] This represents investments of the Manila Railroad Company.

[2] The following firms are included:

Total	₱ 5,129,236
Madrigal Steamship Company	938,599
Pan Oriental Shipping Company	42,642
General Shipping Company	256,459
Compania Maritima	3,125,871
Philippine Overseas Steamship Co., Inc.	380,025
Manila Steamship Company	385,640

[3] Composition:

Total	₱ 2,197,289
Provincial Government of Bohol	50
Philippine Long Distance	2,085,857
Davao Telephone Company, Inc.	31,382
Ramirez Telephone Corporation	80,000

[4] This refers to the investment of the Bureau of Telecommunications only.

[5] This includes the following stations:

Total	₱ 269,931
DZBC	30,063
DZFM	151,779
DZPI & DZAB	48,716
DZRH & DZMB	39,373

[6] Breakdown:

Trucks and Buses	₱28,434,034
TPU	26,862,283
TC	492,597
TH	237,699
DAL, LBL, MML & Central Garage	841,455

[7] Philippine Airlines.

[8] National Airports Corporation.

PUBLIC WORKS PROGRAM

INVESTMENT IN PUBLIC WORKS PROGRAM BY THE PHILIPPINE GOVERNMENT[1]

PROJECTS	ESTIMATED INVESTMENT	ACTUAL, 1949[2]
Schools, hospitals and markets	₱13,000,000.00	₱ 5,072,915.96[3]
Public Buildings	2,000,000.00	———
Rock Quarries	500,000.00	368,079.03
Fixed Military Installations (Bldg. etc.)	2,500,000.00	6,886,832.42
Highways	5,500,000.00	15,040,296.80
Sanitation	3,400,000.00	———
Water Supply	3,000,000.00	4,431,799.33
Flood Control and Drainage	2,000,000.00	3,370,464.81
Port Improvements	4,600,000.00	1,951,240.88
	₱36,500,000.00	₱37,121,629.23
Projects not listed:		
Waterworks and Irrigation		₱ 1,103,533.74

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[1] Does not include Airports and Irrigation Systems.

[2] All of these items except water supply and fixed military installations represent expenditures of the Bureau of Public Works for the fiscal year 1948-1949. It does not include the disbursements made by the Water Damage Commission, U. S. Public Roads Administration and the Manila Engineering District.

[3] Includes schools, hospitals, markets and other national and provincial buildings.

PHILIPPINE AGRICULTURAL PRODUCTION, PREWAR, POSTWAR AND 1949 TARGETS COMPARED WITH ACTUAL, 1949 AND PROJECTED TARGET FOR 1954

(In Metric Tons)

Items	Actual			1949-targets in 1948 program	1954-targets in revised program	1949-actual percent of 1940	1954-targets percent of 1940	1949-actual percent of 1946	1949-actual percent of 1949-target
	1940	1946	1949						
Rice, rough (paddy)	2,362,746	1,623,330	2,491,290	2,458,750	3,110,900	105.44	131.7	153.47	101.32
Corn	572,185	331,260	534,070	499,761	725,900	93.34	126.9	161.22	106.87
Fishery	170,000	49,560	238,003	456,800	385,437	140.00	226.7	480.23	52.10
Sugar	997,067 (1)	62,640	692,910	750,000	1,150,000	69.49	115.3	1,106.18	92.39
Copra	736,474	203,610	698,120	713,310	721,200	94.54	97.7	342.53	97.87
Coconut oil (from mills)	3,000	—	2,980	—	3,900	99.33	130.0	100.00	—
Desiccated coconut	40,518	—	58,760	—	65,000	145.02	160.4	100.00	—
Abaca	172,343 (2)	30,420	74,510	105,000	178,800	43.23	103.7	244.94	70.96
Tobacco	32,115	14,330	21,920	17,500	40,500	68.25	126.1	152.97	125.26
Peanuts	6,530	3,040	9,570	9,470	12,000	146.55	183.8	314.80	101.06
Ramie	849	—	50	500	4,400	5.89	518.3	100.00	10.00
Jute	—	—	—	949	—	—	—		—
Logs, (board feet) - timber	898,000,000	239,994,000	1,047,000,000	—	1,210,000,000	116.59	134.7	436.26	—
Sawn lumber (board feet)	332,910,000	108,122,000	492,000,000	480,000,000	556,000,000	147.79	167.5	455.04	102.50
Root crops	615,026	434,100	528,230	—	626,100	85.89	101.8	121.71	—
Fruits and nuts (3)	256,340	261,430	269,750	—	408,500	105.23	159.4	103.18	—
Beans and vegetables (4)	42,430	32,240	59,680	—	70,900	140.66	167.1	185.11	—
Livestock (number of animals):									
Carabaos	3,015,400	1,388,870	1,921,360	2,103,300	3,386,100	63.72	112.3	138.34	91.35
Cattle	1,396,260	443,530	671,560	675,700	1,057,200	48.10	75.7	151.41	99.39
Horses	343,500	151,260	201,630	236,300	324,730	58.70	94.5	133.30	85.33
Hogs	4,446,790 (5)	1,460,780	3,348,900	2,887,500	5,687,700	75.31	127.9	229.25	115.98
Goats	420,000 (5)	182,730	305,800	271,200	492,490	72.81	117.3	167.35	112.76
Sheep	40,000 (5)	19,030	27,560	—	—	68.90	—	144.82	—
Chicken	27,000,000 (5)	7,166,550	20,359,100	16,187,600	34,844,400	75.40	129.1	284.09	125.77
Ducks	700,000 (5)	329,610	750,700	702,300	1,214,700	107.24	173.5	227.75	106.89
Geese	30,000 (5)	19,890	31,100	—	—	103.67	—	156.36	—
Turkeys	45,000 (5)	19,150	31,000	—	—	69.11	—	162.40	—

SOURCE OF BASIC DATA: The Agricultural Development Program, National Economic Council, June 9, 1950.

(1) Including mucovado sugar and panocha.

(2) Based from the 1949 baling report of the Fiber Inspection Service.

(3) Excludes the production of minor fruits like guava, duhat eatc.

(4) Excludes the production of minor vegetables from tree crops, vine crops, and other green vegetables.

(5) Estimates only.

PHILIPPINE AGRICULTURAL PRODUCTION, PREWAR, POSTWAR AND 1949 TARGETS COMPARED WITH ACTUAL, 1949 AND PROJECTED TARGET FOR 1954

AREA
(Hectares)

Items	Actual			1949-targets in 1948 program	1954-targets in revised program	1949-actual percent of 1940	1954-targets percent of 1940	1949-actual percent of 1946	1949-actual percent of 1949-target
	1940	1946	1949						
Rice	2,080,380	1,649,960	2,164,100	1,889,600	2,380,000	104.02	114.40	131.16	114.53
Corn	912,890	571,090	866,200	822,300	1,018,900	94.89	111.61	151.67	105.34
Fruits and nuts	201,440	186,310	203,000	—	215,000	100.77	106.73	108.96	—
Sugar	229,700	28,960	128,960	174,410	230,000	56.14	100.13	445.30	73.94
Coconut	1,051,210	960,000	965,500	1,051,210	967,000	91.85	91.99	100.57	91.85
Abaca	291,530	272,420	282,700	185,800	305,000	96.97	104.62	103.77	152.15
Tobacco	57,920	27,080	38,740	35,000	60,000	66.89	103.59	143.06	110.69
Peanuts	12,170	7,550	18,600	17,100	21,500	152.83	176.66	246.36	108.77
Ramie	400	—	470	500	2,000	117.50	500.00	100.00	94.00
Root crops	178,010	148,340	172,360	—	180,000	96.83	101.12	116.19	—
Beans and vegetables	49,400	30,040	48,880	—	56,000	98.95	113.36	162.72	—

SOURCE OF BASIC DATA: The Agricultural Development Program, National Economic Council, June 9, 1950.

Estimate of Direct American Aid, Loans and Credits, Contractual Payments, Expenditures and other Transfers With Respect to the Philippines, V-J Day Through 1949*

(Million Dollars)

Philippine Rehabilitation Act		445.1
Title I	258.1	
Title II	100.0	
Title III	87.0	
Military Establishment Expenditures		480.0
Military Assistance		166.0
Payments to USAFFE and Recognized Guerilla Groups		132.0
Payments by Veterans' Administration		127.6
Redemption of Guerilla Currency		57.0
Reconstruction Finance Corp. Budgetary Loan		60.0
Refund of Proceeds of Taxes on Coconut Oil, Sugar, Etc.		89.5
Civilian Supplies		48.1
Missing Persons Claims, U. S. Navy		17.5
U. S. Portion of UNRRA		7.7
OFLC Credit		6.0
WAA Credit		1.0
		1,637.5

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*Does not include U. S. Army Payments under the Foreign Claims Act, payments for torts and similar purposes, the value of technical assistance provided on housing, agriculture, finance, training of foreign service personnel, nor of technical assistance provided in respect to military and naval matters and training of officers and enlisted men; nor does the table include short-term RFC and CCC credits and other miscellaneous small items.

July 6, 1950

EXPENDITURES — PHILIPPINE REHABILITATION PROGRAM

Agency	Amount Expended in 1949	Amount expended through 1949	Estimated expenditures during 1950	Estimated expenditures during 1951	Est. Expend. 1952/53	Program Totals
War Damage Commission						
Title III	$ 11,523,381	$ 38,067,817	$ 18,932,183	0	0	$ 57,000,000
Title I	162,481,488	258,102,558	141,897,442	0	0	400,000,000
Bureau of Pub. Roads	11,207,292	15,939,808	18,000,000	$ 6,060,192	0	40,000,000
Maritime Commission	180,000	499,653	170,000	120,000	$100,000	889,653
Corps of Engineers	6,443,040	14,133,103	3,466,897	200,000	0	17,800,000
Fish and Wildlife Service	1,400,000	2,719,587	500,000	0	0	3,619,587
Civil Aeronautics Adm.	1,178,857	7,251,480	1,348,520	0	0	8,600,000
Coast & Geodetic Survey	350,853	840,985	150,000	0	0	1,190,985
Weather Bureau	800,000	2,829,698	200,000	0	0	3,029,698
Public Health Service	1,000,000	4,697,695	502,305	0	0	5,200,000
Totals -	$196,564,911	$345,082,384	$185,167,347	$ 6,380,192	$100,000	$537,329,923

AID RECEIVED FROM THE UNITED STATES
(CASH OR COST OF PROPERTIES OR SERVICES)

I. Surplus properties —		
1. Procurement Cost of surplus property per VSD's (invoices)	₱2,023,770,126.75	
2. Net procurement cost of surplus property sold	1,906,686,800.91	
3. Actual recovery		
Cash	49,399,156.70	49,399,156.70
Transferred on memorandum receipts	37,456,589.51	37,456,589.51
II. War Damages —		
Public properties:		
Buildings & Waterworks (including obligations)		110,442,997.00
Bridges & roads (including obligations)		41,674,000.00
Government corporations		4,400,000.00
Other properties		———,———
Piers & harbors		36,000,000.00
Private Properties:		
Amount paid to private individuals and corporations		521,273,687.00
Number of claimants	1,249,873	
Number of claims processed	1,154,860 of	
which 44,782 claims were totally disallowed		
Number of claims actually approved	1,110,078 of	
which 1,780 are under appeal		
Number of claims actually paid	1,108,298	
III. Military Assistance —		
Spent for the maintenance of U.S. Army installations since 1945.		No figures available from the Armed Forces of the Phil. nor from the Bureau of Public Works.
Spent for payment to U.S. Army, Air Force, Navy and civilian personnel assigned in the Philippines		
Cost of —		
Supplies and materials (subsistence supplies)		1,633,217.03
Engineering property		4,046,424.65
Signal Equipment		5,098,618.15
Airport equipment		2,513,585.67

Ordnance	54,483,452.18
Quartermaster	5,880,761.04
Phil. Naval Patrol	92,407,397.18
Medical supplies and equipment	215,729.75
Backpay to Army personnel and guerrillas	506,306,147.31
IV. Pensions paid directly by the U. S. Government including insurance	205,241,953.24
V. Redemption of guerrilla notes, including acquisition of real property, educational grants, etc., per Executive Agreement	50,000,000.00
VI. Enemy properties turned over to the Phil. Government	150,000,000.00
VII. Expenditures for activities undertaken in the Philippines —	
Civil aeronautics	17,470,000.00
Weather Bureau	4,502,332.00
Coast & Geodetic Survey	2,376,690.00
Quarantine	1,299,347.16
Health	1,301,000.40
Hospitals	1,314,856.34
Fisheries	7,497,080.00
Dept. of Health (Off. of the Secretary)	4,067,177.06
Institute of Hygiene	256,825.04
Institute of Nutrition	100,000.00
VIII. Others —	
UNRRA	23,576,000.00
U. S. Army (Quartermaster & PCAU)	11,166,000.00
Total	P1,953,401,166.41

January 24, 1950

NATIONAL DEVELOPMENT COMPANY
Calle Pureza, Sta. Mesa
Manila

July 26, 1950

Dr. Leonides S. Virata
Director, Department of Economic Research
Central Bank of the Philippines
Manila

Sir:

In reply to the letter of Mr. Cesar M. Lorenzo, Chief Statistician and Executive Officer of your Department, dated July 3, 1950 pertaining to compilation of Statistics of investments in various industries including those of Government Corporations, I am forwarding to you the progress report of the different units of the National Development Company that received initial outlays from the Central Bank, namely:

(a) Construction of three (3) ocean-going vessels in Japan.

(b) Ilocós textile project

(c) Rice and Corn Projects by RCPA

(d) Establishment of a national shipyard and graving dock

(e) Establishment of a small steel plant

(f) Establishment of a Kraft paper and bag-making mill.

The report for each project is the latest available as stated in the respective report of the head of each project. With regard to the RCPA, we are sending you the whole report of the Managing Director as it is outside of the management of the NDC, although it is under the same Board of Directors.

I hope you will find these information suitable to your purpose. If you think we would be of further help to you regarding the projects which we are concerned, please do not hesitate to call on us.

Very sincerely yours,

/S/ ANDRES PALMA
/T/ ANDRES PALMA
Economic Consultant

a. Construction of three (3) ocean-going vessels in Japan according to the Progress Report of Construction of three (3) Ocean-Going Vessels in Japan as of April 19, 1950 is as follows:

Arranged according to itemized requirement of Central Bank

1.	Cost of one vessel as per contract	$2,346,000.00
	Extras for each vessel	56,050.00
	Supplies: Chinawares, glasswares, silverwares, kitchen utensils, per vessel	6,333.00
	Supply of Radar	11,133.00
	Subsistence of crew at Nagasaki	2,550.00
	Provisions for ship (Nagasaki/Manila)	1,919.47
	Fuel Oil	5,880.00
	Lubricants	7,932.22

2. Completion: 1st Vessel — 19 August, 1950
2nd Vessel — 19 January, 1951
3rd Vessel — 19 June, 1951

Percentage of completion: 1st Vessel — 92%
2nd Vessel — 66%
3rd Vessel — 15%

3 & 4. Amount of Loan from the Central Bank as of June 30, 1950 — ₱9,451,668.04. They are all Disembursed.

Expenses — Including Interest & Money of the N. D. C.	₱9,757,268.12

5 & 6. Not applicable as Shipyard is of foreign ownership.

b. *Ilocos Textile Project* — The report of the Manager of the Textile Mills as of June 30, 1950 is as follows:

Additional Capital Outlay Requirements

1.	Buildings (10,665 sq. meters)	₱ 660,000.00
2.	Land (10 hectares)	5,000.00
3.	Improvements on land (Filling, leveling)	15,000.00
4.	Transportation of machinery and other mill equipment and materials	150,000.00
5.	Spare parts	600,000.00
6.	Other equipment (Essential equipment)	180,000.00
7.	Power plant (600 KW — 3 units of 200 KW Diessel Electric Generators)	390,000.00

8. Mill installation Expenses (Calculation based on our experience with the Manila factory)	450,000.00
9. Repair of Sulvec Pier needed for loading and unloading raw materials, etc.	58,750.00
TOTAL ESTIMATE (March, 1949)	₱2,538,750.00

NOTE: This amount does not include ₱481,406.30 already spent in the reconditioning, cleaning, sorting, cataloguing and crating of machinery, equipment and parts preparatory to transportation to Narvacan.

It can, as of this date, be mentioned that the following work had already been undertaken:

1. Items 1 to 4 had already been completed.
2. Fifty percent (50%) of the spare parts needed for the complete rehabilitation of all the existing machinery and equipment had already arrived; and the remaining 50% is being negotiated.
3. The Power Plant Bid had already been awarded to the Atkins Kroll & Company of San Francisco, California. Arrival of the power plant machinery and equipment will take 150 days after receipt of the supplier of an irrevocable letter of credit (necessary exchange now being processed in the Central Bank).
4. Advertised Bids for the Complete Erection and Installation of the 17,500 Spindle (Cotton) Mill had already been released. Opening of the Bids will take place at 10:00 A.M., July 15th, 1950, in the Textile Department, NDC.

The estimated period of erection and installation is about eight (8) months.

Advances from the Central Bank for this project up to June 30, 1950 amounted to ₱1,362,500.00 out of which ₱1,089,242.65 had been disbursed leaving an unexpended balance as of June 30, 1950 of ₱273,257.35.

The difficulties encountered in the procurement and delivery of equipments and spare parts hindered the immediate completion of the projects.

For an explanation of the development of the textile industry undertaken by the NDC (Textile Department), the following comments are presented:

1. Manila Textile Mills (operating): Has two (2) plants, namely: Manufacturing Plant, and a Finishing Plant. The Manufacturing Plant

produces 3,000 lbs. "weaving yarn", and 44,000 yards of woven cloth per day channeled as follows:

a) 3,000 lbs. go to the "home weaving industries";

b) 20,000 yds. of woven cloth sold to the local "lining trade" in the form of "cocos crudos" or "grey cloths";

c) 24,000 yds. of the "grey cloths" go to the Finishing Plant for processing into bleached, dyed, and printed goods. To operate the Finishing Plant at full blast capacity, a supplementary importation from Japan of "grey goods" is made in the amount of 26,000 yds. per day (As implemented under Executive Order No. 328 in accordance with the Trade & Financial Agreement between P. I. and Occupied Japan).

2. The Narvacan Spinning Mill (will operate latter part first quarter of 1951): Will produce only "weaving yarns". The production will approximately be 10,000 lbs. per day. The existing demand for "weaving yarns" (95% of total consumption are in the Ilocos Regions) will eventually have to be met by the Narvacan Spinning Mill. Based on the 1948 figures of the Bureau of Census and Statistics, the actual demand of home weavers in the entire Ilocos is around 7,200 lbs. per day. To enable the Narvacan Spinning Mill to operate at full blast capacity, promotional activities will be undertaken to encourage the further development of the home weaving industries in order to absorb additional 2,800 lbs. of "weaving yarn" per day. The Home Cottage Industries, PRATRA, and the UNRRA (Under Mrs. Murphy and Mrs. Rice) are cooperating with the Textile Mills (Manila) along this line of promotional work.

3. The Knitting Mill (80,000 dozens undershirts per month): When the Narvacan Mill operates, the present Manila Mill will be relieved of its present responsibility, now carrying on its shoulders, of supplying 3,000 lbs. yarn per day to the "home weavers". In the overall planning, the question arises: "Where shall we direct this yarn production?" The Manila Mill could, however, under the present set-up, produce "knitting yarns" instead of "weaving yarns". A proposed Knitting Plant, with a capacity of around 80,000 dozens undershirts per month (Capitalization: P1,100,000.00) could absorb this "yarn production" of the Manila Mill. We will, under this Plan, import no additional raw-cotton by the establishment of a Knitting Plant, but, on the other hand, we shall be able to produce undershirts, polo shirts, skippers, etc. which will create additional wealth in the country, give additional employment to our people, and conserve the dollars by further clamping of "imported knit goods and manufactures". A proposed Mill of this size will employ approximately 275 people. The economic justification of this project is herewith pre-

sented in the enclosed sheet showing Operating Expenses and Income of an Integrated Textile Organization (for 1952) composed of the Manila Textile Mills with a Knitting Plant, and the Narvacan Spinning Mill.

The Textile Industry, if given adequate governmental protection will also gradually direct its activities in the field of Rayon, Ramie, and Jute. Economic and technical studies are being undertaken by the Technical Staff of the Textile Department (NDC) on these three distinct classes of fibers which hold great promise in this country.

d. The National Shipyard and Graving Dock Project

The report submitted by the Manager of the National Shipyard and Graving Dock as of June 30, 1950 is as follows:

1. The National Shipyard and Heavy Industries was approved under Resolution No. 262 of the Board of Directors of the National Development Company on August 9, 1949. Upon completion of a short range program of activities covering the half million peso release last year and the organization of a skeleton office force, the Manager and Chief Engineer (NASHI) left last November for the United States to procure essential equipment and plant, materials and supplies. Purchases were made for structural parts of buildings, Whirley and overhead cranes, concrete mixers, nails, sheet piling, reinforcing steel bars and miscellaneous materials. Some of these have been received in Mariveles and the rest are arriving from time to time.

2. After the organization of the Office now located in the Engineer Island, the activities both in the Manila Office and in Mariveles expanded considerably requiring additional funds. These were granted by the Central Bank upon request of the General Manager of the National Development Company, the mother entity, thru the former Government Enterprises Council. All funds are properly budgeted. To date the total release for expenditures up to June 30, 1950, amount to ₱4,025,408.62 as folows:

August 15, 1949	₱ 515,230.00
March 25, 1950	75,000.00
April 11, 1950	100,000,00
May 3, 1950	1,700,000.00
May 10, 1950	1,435,178.62
May 10, 1950	100,000.00
June 26, 1950	100,000.00

3. The four phases of the project which are of top priority are as follows:

17 AVR. 1951
LIBRARY

574214

(1) Marginal Wharf
(2) Drydock
(3) Dredging and Filling
(4) Repair shops

Construction work on the shipyard which was started late last year were mainly on the essential necessities preparatory to work on the above four phases of the project. Already the following have been completed:

(a) One timber pier, 200 ft. long by 24 ft. wide
(b) Warehouse and small repair shop
(c) Administrative and Office Building
(d) Engineers', employees', and laborers' quarters totalling about twenty-five buildings with a capacity for aproximately 400 men.
(e) Infirmary and hospital facilities
(f) 50 kilowatt power plant for lighting facility
(g) Boring on the drydock and wharf sites
(h) Streets and drainage structures

Simultaneous with the construction work, construction equipment in the form of a floating pile driver, tugboat, barges, cranes, bulldozers, trucks, compressors, pumps, and minor equipment have been acquired locally either from surplus or reparation items.

The preliminary development work of the project has been completed and an accelerated and vigorous program for the construction phase of the four top priorities of the project are underway.

(1) With the use of the bulldozers excavation work on the drydock proper is in progress. Additional equipment is being acquired to further speed up this phase of the work.

(2) A 700 KVA power plant from reparation equipment is now nearing completion. Subsequently thereafter another additional unit of equal capacity will be erected.

(3) Driving wooden piles for the false work on the marginal wharf has been started and actual driving of the steel sheet piles will be commenced soon.

(4) Negotiations for the use of the Bureau of Public Works dredge for dreging the harbor and filling the low areas in the way of the repair facilities and shops are underway. It is expected that dredging operation will commence next month.

(5) Road construction and improvement to withstand heavy usage is being rushed.

(6) Design work is well underway, with that for the marginal wharf completed and the Graving Dock almost finished. Design of the shipbuilding ways, steel buildings and minor structures is in progress. Preparation of bill of materials and estimates were made as plans were completed. Survey work for drainage and waterworks studies and design are being undertaken.

(7) A vigorous campaign against malaria is in progress for the benefit of the personnel and women.

Barring unforeseen delays, it is expected that a well organized shipyard will be in function in 1952 with a happy community of workers and their families firmly established in the shipyard area.

e. The Steel Mill Project

This project was approved by the National Economic Council under resolution No. 24 on April 1949. The Steel Mill on process of exploration will have an initial capacity of 1,500 tons per month with necessary investment of ₱4,500,000.00. Of this amount $1,700,000.00 (US dollars) will be required for equipment and materials to be purchased from abroad and the balance of ₱1,100,000.00 will be spent locally for labor, local materials and services. The principal and almost the only raw materials needed are the scrap iron and scrap steel that are locally available in sufficient quantities. The project aims to meet the yearly importation of steel bars and rods of 39,345 metric tons or an average of 3,290 tons per month. This importation would be increased due to extensive reconstruction and rehabilitation work now in progress. The total investment of the National Development Company to this project so far is ₱217,500.00. The amount advanced from the Central Bank was ₱40,000.00. Only ₱5,000.00 of this sum remains as of July 23, 1950.

What has actually been done so far was the sending of a delegation of three engineers to the United States and Japan to prepare the specifications and recommendations for the purchase of all the equipments needed for the Steel Mill Project. The project is still under exploration stage and requires a re-study.

f. Kraft Paper and Bag Making Plant

The Kraft Paper and Bag Making Plant started its operation on October 1, 1949. For the above project—Kraft Paper and Bag Making Plant, the loan obtained from the Central Bank of the Philippines was ₱891,050.00. The balance of ₱1,018,950.00 was supplied from the funds of the

National Development Company. The total cost of installation of the Kraft Paper Bag Making Plant are as follows:

1.	Kraft Pap[illegible]	₱1,650,000.00
2.	Bag Making Plant	260,000.00
	Total	₱1,910,000.00

The money taken from the Central Bank were all spent.

The Kraft Paper mill produces Kraft paper at the rate of approximately 10 tons a day. Additional equipments is now in transit which will boost the production of Kraft Paper to 480,100 kilos. Kraft paper is also manufactured in sheets of 42" × 72" to 78" and to date production of this kind of paper is 524,100 sheets weighing approximately 102,700 kilos. The Bag Making Plant has produced to date approximately 900,000 bags consisting mostly of 5-ply cement and fertilizer bags and 3-ply lime bags. It has at present an average capacity of 15,000 bags and expects to produce 40,000 bags a day within two months.

The Kraft paper Mills supplied 600,000 sheets of Kraft Paper (42" × 76") to the Commission on Election for approximately ₱109,400.00. To the Procurement Office, Bureau of Purchase & Supply and to the Bureau of Printing worth several thousand pesos.

The Bag Making Plant on the other hand has supplied the Luzon Stevedoring Company approximately 12,000 unprinted cement bags of the 4-ply sewed and valued type of Cebu Portland Cement. The sales of Kraft Paper from July 1, 1949 to May 31, 1950 amount to ₱125,178.71 and the sales of Paper bags amount to ₱87,581.73 therefore making the total of ₱212,878.00.

The balance sheet as of May 31, 1950 of the Kraft Paper and Bag Making Plant has liquid assets amounting to ₱1,984,282.39. The fixed assets amounting to ₱1,247,471.04. The construction and installation progress amounting to ₱149,181.15. The charges amounting to ₱503,975.93. The total assets as itemized above is equal to ₱3,884,910.51. The liabilities as of May 31, 1950 are as follows:

Liquid Liabilities	₱ 729,347.33
Long Term Loan from the Central Bank	891,050.00
The total liquid & Long Term Loan amount	₱1,620,397.33

ALBAY PULP MILL

The proposed Albay Pulp Mill will have a daily capacity of 10 tons of pulp to be manufactured from abaca stripping waste. Another source of raw materials in the Bicol Region is the Canton plant, the whole stalk of which may be used for conversion into pulp.

Eighty percent of the equipment for this proposed pulp mill is already in Manila as this was bought from Japan. The original capacity of this mill is 20 tons but we are using only approximately one-half of the equipment in order to start the Albay Pulp Mill with the smallest capacity unit that is economically feasible.

The remaining half of the equipment bought from Japan will be offered to a sugar mill in Luzon which will process excess bagasse. The payment for this equipment may be in the form of pulp. The National Development Company advanced from its own funds approximately ₱300,000.00 for the payment of this equipment from Japan.

For the completion of the Pulp Mill equipment and construction and installation of the Albay Pulp Mill, $250,000.00 (U.S. Dollars) and ₱700,000.00 is requested for immediate release.

MALANGAS COAL MINES

In compliance with your requirement, we are submitting the latest Balance Sheet for the Malangas Coal Mines, as of April 30, 1950. Due to the distance from Zamboanga and lack of complete data, our Accounting Department has yet to complete their June 30th report. The Balance Sheet shows accumulated losses from the beginning of operation amounting about ₱127,000, of which ₱43,150 is due to back pay advances and ₱37,150 for donations of lumber for the use of Constabulary forces guarding the reservation and the construction of School Houses in the Area.

Due to lack of funds, the N.D.C. cannot make further advances to the Malangas Coal Mines and its operation is limited to the production of 3,000 tons per month for the Cepoc, at not a very economical cost of operation because the present machineries came from the surplus and are mostly gasoline consuming and very costly to operate. Hence, our urgent need of additional capitalization of about ₱2,500,000 for the purchase of new machineries, diesel transportation units, belt conveyor loading system, etc., and to enable us to expand underground development and operation to boost our production from 5,000 to 7,000 tons per month at a much lower cost of production than at present. The Cepoc alone is consuming 18,000 tons of coal per month and they are paying us ₱22.00 per ton F.O.B. Malangas.

American and Filipino geologists have estimated at least 3,000,000 tons of coal reserve available in the Lalat area alone of Malangas, the value of which will amount to about ₱60,000,000. We cannot extract this coal from the ground without the additional capitalization requested.

It is cheaper to use coal than to use imported fuel oils for industrial power, but many capitalists use the latter or have converted to diesel power due to lack of coal supply in the beginning as it takes time and money to develop a coal mine.

NATIONAL DEVELOPMENT COMPANY
MALANGAS COAL MINES

Exhibit "A"
(continued 1)

BALANCE SHEET
APRIL 30, 1950 AND JUNE 30, 1949

ASSETS	APRIL 30, 1950	JUNE 30, 1949	INCREASE OR DECREASE ()
CURRENT ASSETS -			
Cash, Paymaster's Account-Sch.1	₱ 85,634.66	₱ 50,799.67	₱ 34,834.99
Cash Advances to Accountable Off.Sch.1	4,725.19	7,486.14	(2,760.95)
Accounts Receivable	108,044.61	59,036.09	49,008.52
Advances to Malangas Coop. Store	-.-	5,925.72	(5,925.72)
	198,404.46	123,247.62	75,156.84
Inventories -			
Coal in the Yard - Malangas - 2276.658 Tons	18,940.98	4,570.14	14,370.84
Coal in the Bins - 898.45 Tons	4,209.10	1,901.01	2,308.09
Explosives	4,022.83	1,189.78	2,833.05
Materials in Transit - Mla-Batangas	52,362.16	37,003.99	15,358.17
Materials in Transit - Zamb.-Malangas	4,550.20	4,550.20	-.-
Medical Supplies	2,907.59	3,292.30	(384.71)
Miscellaneous Supplies	182,910.70	168,698.68	14,212.02
Lumber in Stock - 34,322 Bd. Ft.	3,530.35	38,184.77	(34,654.42)
Rice in Stock - 1,226-1/2 Gantas	1,166.46	960.27	206.19
	274,600.37	260,351.14	14,249.23
Total Current Assets - - -	473,004.83	383,598.76	89,406.07
WAR DAMAGE CLAIMS RECEIVABLE - (CONTRA)			
U.S. Philippine War Damage Commission	612,609.53	612,609.53	-.-
FIXED ASSETS -			
Mine Property & Development	1,227,222.64	1,231,719.97	(4,497.33)
Buildings	127,937.74	118,951.25	8,986.49
Roads, Bridges, Camp Site & Improvements	248,372.91	229,468.19	18,904.72
Machinery & Equipment	513,764.73	421,605.63	92,159.10
	2,117,298.02	2,001,745.04	115,552.98
Less Reserve for Depreciation & Depletion-	299,231.10	201,090.20	98,140.90
Total Net Fixed Assets - - - -	1,818,066.92	1,800,654.84	17,412.08
CONSTRUCTIONS & INSTALLATIONS IN PROGRESS -			
Buildings under Construction	90,673.54	19,710.24	70,963.30
Machinery under Installation	5,804.48	2,907.29	2,897.19
Camp under Construction	2,256.68	-.-	2,256.68
Roads under Construction	826.41	3,021.16	(2,194.75)
Job Orders in Process (Furniture)	369.55	50.45	319.10
Total Const. & Inst. in Progress - -	99,930.66	25,689.14	74,241.52
DEFERRED CHARGES -			
Suspense Account	44,380.12	44,380.12	-.-
Deferred Expenses - Sch. 2	731,975.32	-.-	731,975.32
Total Deferred Charges - - -	776,355.44	44,380.12	731,975.32
TOTAL ASSETS - - -	₱3,779,967.38	₱2,866,932.39	₱913,034.99

LIABILITIES AND NET NORTH

CURRENT LIABILITIES -			
Accounts Payable - Shc. 1	₱ 1,381.71	₱ 19,446.39	(₱ 18,064.68)
Unclaimed Wages	5,085.53	3,303.07	1,782.46
Gov't Service Insurance System	265.20	322.21	(57.01)
Payrolls Account	24,649.30	20,919.84	3,729.46
Contribution to Backpay Sinking Fund	43,165.89	43,165.89	-.-
Accrued Taxes Payable	-.-	1,427.88	(1,427.88)
Current Account - NDC & Subsidiaries	754,795.61	1,243.19	753,552.42
Current Account - Malangas Coop. Store	13,434.19	-.-	13,434.19
Leave Withheld Payable	25.00	-.-	25.00
Total Current Liabilities - - -	842,802.43	89,828.47	752,973.96

Exhibit "A"
(Concluded 2)

	APRIL 30, 1950	JUNE 30, 1949	INCREASE OR DECREASE ()
War Damage Claims Receivable — (Contra)			
U.S.-Philippine War Damage Commission	₱ 612,609.53	₱ 612,609.53	₱ ——
Deferred Credits —			
Guaranty Deposits	2,248.44	1,748.44	500.00
Suspense Credits	4,405.70	1,510.00	2,895.70
Deferred Income — Sch. 2	177,291.80	——	177,291.80
	183,945.94	3,258.44	180,687.50
Trust Funds —	15,518.82	——	15,518.82
Net Worth			
Investment — National Develop. Co.	2,252,539.53	2,252,539.53	——
Deduct — Accumulated Losses	127,448.87	91,303.58	(36,145.28)
	2,125,090.66	2,161,235.95	(36,145.28)
Total Liabilities and Net Worth	₱3,779,967.38	₱2,866,932.39	₱913,034.99

CERTIFIED CORRECT:

/s/ CARLOS P. MORALES
/t/ CARLOS P. MORALES
Chief Accountant

Manila ——————————, 1950
Asst. Auditor

CHAPTER VI

A. TRADE DEVELOPMENTS DURING THE FIRST HALF OF 1950

1. General Movements

Important shifts in the international trade of the Philippines occurred during the first six months of 1950. The trade deficit was substantially reduced as a result both of a slight increase in exports and a marked decline in imports. A notable change in the composition of the latter also took place due to the control program.

Total exports during the first half of 1950 reached ₱283.8 million and imports ₱374.1 million. Compared with the first half of 1949, exports increased by 5 percent and imports dropped by about 41 percent. The trade deficit dropped from ₱357.8 million during the first six months of 1949 to ₱90.3 million. The monthly trade deficit for 1949 and 1950 is shown below:

FOREIGN TRADE OF THE PHILIPPINES
MONTHLY, 1948 — 1950
(In Million Pesos)
(F. O. B. Value)

Year and month	Total Trade	Imports	Exports	Balance of Trade
1948	1,807.2	1,171.7	635.5	(—) 536.2
1949	1,668.0	1,160.4	507.6	(—) 652.8
January	139.3	99.2	40.1	(—) 59.1
February	147.9	105.3	42.6	(—) 62.7
March	185.4	135.4	50.0	(—) 85.4
April	126.9	83.8	43.1	(—) 40.7
May	139.6	94.4	45.2	(—) 49.2
June	160.5	110.6	49.9	(—) 60.7
July	128.9	80.4	48.5	(—) 31.9
August	129.4	93.7	35.7	(—) 58.0
September	107.0	65.5	41.5	(—) 24.0
October	121.4	87.4	34.0	(—) 53.4
November	110.7	77.8	32.9	(—) 44.9
December	171.0	126.9	44.1	(—) 82.8

1950	658.4	374.1[a]	283.8[b]	(—)	90.3
January	102.0	62.2	39.8	(—)	22.4
February	118.6	71.3	47.3	(—)	24.0
March	109.6	60.8	48.8	(—)	12.0
April	111.2	62.1	49.1	(—)	13.0
May	109.0	56.2	52.8	(—)	3.4
June[c]	108.0	61.5	46.0	(—)	15.5

II. Geographical Pattern of the Foreign Trade

The great bulk of the country's foreign trade is still with the United States. In prewar years, an average of 60 percent of the import trade and 81 percent of the export were with the United States. In the postwar years, the United States share in exports averaged 65.2 percent for 1946 to 1949 and in imports, about 84.7 percent. A tendency to swing back to the prewar positions is indicated in 1950. The percentage of exports to the United States has been steadily going up and for the first six months of 1950 reached 77.3 percent of the total. On the other hand, the share of the United States in imports for the same period has gone down to 77.7 percent.

Trade with some countries which devalued their currencies is showing the effects of devaluation. The percentage of imports from these countries to the total has increased and their share in exports for the first six months of 1950 has declined as compared with the like period in 1949. From a share of 12.2 percent of imports and 17 percent of exports during the first six months of 1949, the participation of these countries changed to 15 percent of imports and 12.6 percent of exports during 1950. Imports from Hongkong, Malaya, Germany, France and Netherlands individually increased in value during the first six months of 1950 as compared to the same period in 1949. Imports from Canada declined in value from ₱15.3 million during the first six months of 1949 to ₱10.3 million during the same period in 1950. On the other hand, exports increased by ₱3 million. Nevertheless, the trade deficit with Canada remains considerable. Deficits in the trade with Hongkong, Australia, Malaya, Indonesia, Iraq, Spain and Thailand together reached a total of more than ₱26 million. With the exception of Great Britain, Norway, France, Italy and Netherlands, with each of which the Philippines enjoyed slightly favorable trade balances, the rest of the countries with devalued currencies had a slight balance in their favor in their trade with the Philippines for the first half of 1950.

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[a] Excludes gold bullion.

[b] Excludes gold.

[c] All June figures in this report are still tentative.

Importation from Japan steadily increased throughout the first six months of 1950, reaching a total of ₱18.8 million for that period. This compares with ₱8.3 million for the corresponding period in 1949. The share of Japan in the total import trade of the Philippines rose from 1.3 percent during the first half of 1949 to 5.0 percent in 1950. Exports to Japan for the first six months of 1950 decreased by ₱1.3 million from the level of the same period in 1949 resulting in a trade imbalance of ₱5.1 million. Trade with Japan is expected to increase in both directions with the full implementation of the trade agreement with the full implementation of the trade agreement with SCAP.

PHILIPPINE EXPORTS AND IMPORTS, BY COUNTRY OF DESTINATION AND ORIGIN JANUARY TO JUNE, 1950

(F.O.B. Value in Pesos)

Country	Total Exports	Percent of Distribution	Total Imports	Percent of Distribution
TOTAL	283,834,805	100.0	374,187,108	100.0
United States	219,605,288	77.37	290,957,032	77.76
Guam	122,378	.04	91,130	.02
Hawaii	496,213	.17	489,396	.13
Puerto Rico	162,316	.06	4,179	[a]
Guatemala	——	—	6,914	[a]
Japanese Oceania	——	—	2,168	[a]
Other European Countries	374,850	.13	532,967	.14
Germany	675,553	.24	2,571,717	.69
Italy	2,789,708	.98	1,363,514	.36
China	976,001	.34	360,153	.10
Hongkong	3,260,354	1.15	6,781,429	1.82
Japan	13,707,782	4.83	18,808,933	5.03
Portugal	12,141	.01	116,454	.03
British Honduras	——	—	9,957	[a]
British West Indies .	16,064	.01	2,323	[a]
British East Indies ..	2,717	[a]	182,982	.05
Brazil	——	—	49,751	.01
Czechoslovakia	3,414	[a]	69,156	.02
Spain	487,647	.17	1,336,506	.36
Switzerland	2,943,518	1.04	1,373,735	.37

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[a] Less than .01 per cent.

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Country	Total Exports	Percent of Distribution	Total Imports	Percent of Distribution
Other US Insular Possessions	——	—	1,089	[a]
Other North American Countries	——	—	1,402	[a]
Other South American Countries	322,209	.11	87,130	.02
Rumania	4,556	[a]	14,250	[a]
Russia	88,379	.03	10,265	[a]
Korea	818,756	.29	219	[a]
Other Countries of Asia	303,654	.11	1,972,653	.53
Siam	667,724	.24	1,179,452	.32
Arabia	9,902	[a]	8,773,993	2.34
Alaska	——	—	799	[a]
Columbia	1,203,760	.42	12,999	[a]
Canada	5,237,910	1.85	10,307,776	2.75
Australia	235,130	.08	1,669,146	.45
Belgium	5,692,141	2.01	3,373,000	.90
Great Britain	5,380,882	1.90	4,828,361	1.29
Netherlands	4,894,960	1.72	1,162,291	.32
Sweden	358,403	.13	629,917	.17
Argentina	7,861	[a]	121,685	.03
Denmark	730,318	.26	89,893	.02
France	1,003,593	.35	570,648	.15
India	874,664	.31	2,573,480	.69
Malaya	110,745	.04	6,276,090	1.68
Finland	20	[a]	1,026	[a]
Norway	2,779,797	.98	215,233	.06
Ceylon	3,000	[a]	195,251	.05
Indonesia	207,393	.07	1,868,371	.50
Iraq	——	—	2,585,583	.69
Burma	4,039	[a]	1,461	[a]
Mexico	——	—	72,805	.02
Austria	——	—	4,573	[a]
Cuba	7,249	[a]	69,806	.02
Newfoundland and Labrador	8,618	[a]	700	[a]
French East Indies	11,100	.01	70	[a]
Poland	——	—	19,716	.01

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[a] Less than .01 per cent.

Belgian Africa	——	—	6,513	[a]
Union of South Africa	995,047	.35	7,537	[a]
Egypt..............	18,781	.01	127,665	.03
Luxemburg	8,400	[a]	3,434	[a]
Costa Rica	——	—	26,627	.01
British Africa	35,000	.01	68,472	.02
Panama Canal Zone .	49,887	.02	47	[a]
Ecuador	1,302	[a]	2,233	[a]
Turkey	400	[a]	47	[a]
Uruguay	——	—	5,599	[a]
Pakistan	——	—	661	[a]
Greece	——	—	166,856	.04
Israel	43,179	.02	9,900	[a]
Venezuela	3,681,941	1.30	——	—
French Africa	17,092	.01	——	—
Portuguese Africa ...	8,881	[a]	——	—
Palestine	1,886,178	.66	——	—
Peru	31,031	.01	——	—
Chile	19,179	.01	——	—
Ireland	56,704	.02	——	—
Iceland	687	[a]	——	—
Syria	373,325	.13	——	—
Panama, Republic of.	5,084	[a]	——	—

III. Trade Composition in Relation to Production and to Trade Controls

a. Exports

Exports during the first half of 1950 reached ₱283.8 million. Compared with the total of ₱270.9 million for the corresponding period in 1949, there has been an increase of 5 percent. Export values of copra, canned pineapple, lumber, iron ore, copper concentrates and unmanufactured abaca increased substantially. Desiccated coconut and rattan furniture made small gains. On the other hand, centrifugal sugar, coconut oil, chromite, leaf tobacco, cordage, embroideries and scrap metals decreased.

During the first half of 1950 the Philippines exported 242,972 metric tons of copra and 23,626 metric tons of coconut oil. For the same period last year, shipments totalled 209,337 metric tons of copra and

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[a] Less than .01 per cent.

25,012 metric tons of coconut oil. In terms of copra the 1950 shipments have been 19.5 percent higher than the preceding year although still about 45 percent under 1948. It is expected that, given continued favorable weather conditions, exports for the year 1950 will be greater than 1949 although they will still be below the all-time high of copra exports in 1947 and 1948 due to comparatively lower prices and an increase in domestic use of coconut oil by local soapers and edible oil products manufacturers. These groups are expected to utilize from 68,000 to 70,000 long tons of coconut oil in 1950 as against 62,000 in 1949 and 40,800 in 1948. Of the total exports of Philippine copra, including coconut oil in terms of copra, to all countries of the world during the first six months of 1950, the United States took 69 percent, as compared to only 51 percent during the same period in 1949.

Sugar registered a decrease of ₱9.68 million during the first six months of 1950 as compared to the same period in 1949. The latest available figures on the out-turn of the Philippine crop indicate that the production for 1949-50 is slightly under the production for 1948-49. As a result, no improvement in 1950 is expected from sugar over that of 1949. The main factor responsible was the unfavorable weather, the drought during the early growing months and the damage caused by typhoons in late 1949. A reduction of about 30,000 tons from the 1949 export level may be expected.

Abaca increased by ₱3.64 million for the first half of 1950 over the corresponding period in 1949. Exports are expected to improve since production improved during 1950. A total export of 600,000 bales is expected for 1950 which compares favorably with the 501,099 bales of 1949. This amount, however, is still far below the 1940 export figure of 1,402,720 bales. A fair amount of abaca went to European countries. Japan was also an active market for the first half of 1950. More than half of the total unmanufactured abaca went to the United States. Malaya, the second largest consumer of cordage, did not buy much during the first six months of 1950 although other Far Eastern countries bought more than their usual prewar purchases.

Leaf tobacco exports decreased considerably (by about 64 percent) in spite of improved production due largely to increased local demand for tobacco for the local manufacture of cigars and cigarettes and due to the lack of dollar exchange of European consuming countries, principally Spain. Estimated production for 1950 is 24,000 metric tons as compared with the actual production of 21,920 for 1949.

Logs and lumber increased by 64 percent during the first half of 1950 over the same period in 1949. An increase of about 20 million board feet in the year-end total is expected over 1949, as strong efforts are being exerted by the Philippine Lumber Producers' Association to regain and expand the market for Philippine woods in the United States. Nearly half of the exports of lumber and timber went to the United States and the rest to Japan, Hongkong, Canada, Ireland, South Africa, Hawaii, Guam, Formosa, Okinawa and Korea. The better grades of timber went to the United States, the volume of sawn lumber being double that of veneer logs. On the other hand, exports to other countries, particularly to Japan, consisted largely of logs. Japan is beginning to absorb increasingly larger quantities of logs for its plywood mills.

Iron ore in the first half of 1950 reached an export value that is almost three times its 1949 first six months export value and copper concentrates increased by about 23 percent. Chromite ore, on the other hand, declined to almost half its export value during the first half of 1949. Increases are still expected with the improvement in production of base metals in 1950 which is estimated to reach ₱38 million as compared with ₱34 million in 1949.

With the completion of the pineapple cannery in Bugo, Bukidnon, exports of canned pineapple are rising well beyond prewar levels. All exports went to the United States. Scrap metals seemed to have run their course and have decreased by 86 percent of their previous postwar values.

PRINCIPAL PHILIPPINE EXPORTS JANUARY TO JUNE, 1949 AND 1950
(F.O.B. Value in Thousand Pesos)

Commodity	1950	1949	Value of Increase or (Decrease)	Relative Increase or Decrease %
Total Exports	283,835	270,978	12.857	5.0
Canned Pineapple	10,352	5,324	5,028	94.4
Desiccated Coconut	21,770	20,112	1,658	8.2
Coconut Oil, Inedible	12,484	15,682	(3,198)	(20.4)
Copra	89,809	75,146	14,663	19.5
Copra Meal or Cake	2,810	2,860	(50)	(1.8)
Molasses	371	1,078	(708)	(65.6)
Sugar, Centrifugal	65,356	75,048	(9,686)	(12.9)
Rubber, Crude	279	282	(3)	(.9)
Leaf Tobacco	739	2,033	(1,293)	(63.6)
Abaca, Unmanufactured	38,043	34,402	3,641	10.6

Maguey, Unmanufactured	173	515	(342)	(66.4)
Cordage (Rope)	1,460	1,682	(222)	(13.2)
Embroideries	5,862	5,788	74	1.3
Lumber	3,312	2,015	1,297	64.3
Rattan Furniture	589	547	42	7.6
Chromite Ore	1,959	3,785	(1,825)	(48.2)
Iron Ore	3,267	1,749	1,518	86.8
Copper Concentrates ...	3,460	2,823	636	22.5
Scrap Metals	685	4,869	(4,184)	(85.9)
Shells, Unmanufactured.	297	312	(14)	(4.6)

b. Imports

Owing to the import, selective credit and exchange controls and the impetus given to local production of previously imported articles, the composition and the value of imports have been changing markedly. The imports for the first six months of 1950 reached a total of ₱374.1 million as compared with ₱628.1 million during the same period in 1949 or a relative decrease of 41 percent.

The total value of imports subject to the old Import Control Law (Executive Order No. 295 as amended by 297 which was in effect up to May 18, 1950 and influenced imports up to June) dropped to ₱106.7 million in the first half of 1950 from a total of ₱313.2 million for the same period in 1949 or a decrease of 66 percent. In this group the heaviest reduction was in purely consumption items which decreased by 68 percent. Non-essential capital goods and raw materials in this group together registered a fractional decline.

There would probably have developed a tendency for imports to shift to commodities outside the scope of Executive Orders 295 and 297 but for the restriction imposed by the regulation of the Central Bank, limiting the amount of exchange available for items not subject to the import control law to only 6 percent per month of total imports by the importer of such items during 1949. This regulation pared down imports of these items by ₱47.4 million or 15 percent from the 1949 level. The effect of the regulation was not only quantitative but also qualitative. Consumption goods affected by it declined by ₱53.6 million or 39 percent, while raw materials increased by ₱9.2 million.

IMPORTS CLASSIFIED ACCORDING TO WHETHER SUBJECT OR NOT TO EXECUTIVE ORDER NO. 295 AS AMENDED JANUARY TO JUNE, 1950 COMPARED TO JANUARY TO JUNE, 1949

	1949 (January to June)		1950 (January to June)		Relative Increase or Decrease
	Value	Percent	Value	Percent	(Percent)
Total Imports[a]	628,126,208	100.0	374,187,109	100.0	— 40.63
Commodities subject to Executive Order No. 297	313,206,268	49.86	106,702,938	28.52	— 65.93
Capital Goods	628,752	.10	1,970,358	.53	+ 213.38
Raw Materials	26,101,488	4.16	13,064,925	3.49	— 49.94
Consumption Goods	286,476,028	45.60	91,667,655	24.50	— 68.00
Commodities not subject to Executive Order No. 295, but subject to Central Bank Notification No. 10	314,919,940	50.14	267,484,171	71.48	— 15.06
Capital Goods	59,153,574	9.42	56,105,216	14.99	— .52
Raw Materials	117,124,810	18.65	126,363,100	33.77	+ 7.89
Consumption Goods	138,641,556	22.07	85,015,855	22.72	— 38.68

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[a] Excludes Gold and Gold Bullion.

Taking the total import as a whole, the reductions in value were heaviest in consumption goods. Their proportion in the total import value dropped to 47.2 percent during the first six months of 1950 from a share of 68 percent for the corresponding period in 1949. The commodity groups, "Soap and Toilet Preparations" and "Foodstuffs" declined by more than 70 percent and "Textile Fibers and Manufactures" by 53.3 percent from the levels they reached during the first half of 1949. Sardines and coffee registered relative decreases of over 70 percent. From a total quantity of 965,193 kilos worth ₱1.6 million during the first half of 1949, chewing gums dropped to 75,086 kilos valued at ₱149 thousand during the first half of 1950. Printed cotton cloth manufactures declined in volume from 11.6 million to 5.7 million square yards.

FIVE LEADING LUXURY IMPORTS
FIRST HALF OF 1950 AND 1949

	(VALUES IN PESOS)		RELATIVE
	1950	1949	DECREASE
1. Passenger Cars	1,558,010	7,145,682	78.2
2. Scotch Whiskey	312,466	349,078	10.5
3. Radio Receiving Set	445,835	1,409,606	68.4
4. Chewing Gum	149,040	1,588,812	78.03
5. Toilet & Fancy Soap	267,609	1,303,086	79.5

Raw materials and capital goods together, on the other hand, increased their share in the total import value to 52.8 percent during the first six months of 1950 from 32.3 percent for the comparable period in 1949. The values of various items in this category have shown significant increases such as "Seed and Nursery Stocks", "Miscellaneous Vegetable Products", "Straw, Rushes, Palm Leaf and Manufactures", "Cork and Manufactures", "Chemicals, Drugs, Dyes and Medicines", and "Fertilizers and Fertilizer Materials". Agricultural machinery and implements more than doubled their value. Semi-manufactures of iron and steel increased by 9 percent while fertilizers rose by 25 percent and chemicals by 18 percent. Corrugated iron and steel roofing increased from 8.7 million kilos during the first half of 1949 to 32.6 million kilos for the same period in 1950. Cigarette paper arrivals trebled. Sulphate of ammonia almost doubled its 1949 first half import quantity of 22,388,936 kilos. Re-exports during the first six months of 1950 reached a total of ₱3.2 million of which 45 percent were metals and manufactures, 40 percent were vehicles and parts (mostly passenger cars), and the rest consumption goods.

TEN IMPORTANT IMPORT ITEMS OF THE PHILIPPINES IN FIRST HALF OF 1950 COMPARED TO THE FIRST HALF OF 1949

	1950	1949	
	January to June (Values in Pesos)		Relative Increase or Decrease
1. Wheat Flour	15,187,591	32,854,524	— 53.8
2. Gasoline and other motor spirits	12,371,053	17,867,866	— 30.7
3. Evaporated Milk	10,291,405	13,849,354	— 25.7
4. Tires and Tubes (autos, trucks, etc.)	7,962,481	12,765,806	— 37.6
5. Corrugated roofing galvanized Iron	7,567,237	3,762,850	+ 101.0
6. Medicine, patent & proprietory	7,148,061	4,943,656	+ 44.5
7. Parts & Accessories of trucks, autos, etc.	5,701,534	10,422,238	— 45.3
8. Printing Paper	4,939,735	6,133,180	— 19.4
9. Sulphate of Ammonia	4,894,434	4,057,380	+ 1.7
10. Printed Cotton Cloth	4,515,698	6,225,618	— 27.5

The changing composition of imports is reflected clearly in the changed proportions of the commodity groups in the total imports. Textile fibers and manufactures which constituted the bulk of consumption goods was the premier import commodity group during the first half of 1949 and previous years. For the first half of 1949 it reached a total of ₱124.5 million or 20 percent of total imports during that period. For the first half of 1950, its share dropped to 15.5 percent and its import value was cut to less than half. On the other hand, metals and manufactures which consisted largely of raw materials and capital goods increased its proportion in total import value to 20 percent during the first six months of 1950 from a former share of only 15.7 percent for the corresponding months of 1949. Metals and manufacturers outranked textile fibers and manufactures as the premier commodity groups in imports.

DISTRIBUTION OF PRINCIPAL IMPORT GROUPS TO TOTAL IMPORTS FROM JANUARY TO JUNE, 1950 AS COMPARED WITH SAME PERIOD OF 1949

Commodity Group	1949 Percent	1950 Percent
Dairy Products	4.0	6.0
Fish and Fish Products	2.7	1.7
Grains and Preparations	5.4	9.6
Tobacco and Manufactures	3.6	3.1
Paper and Manufactures	4.3	4.6
Non-metallic Minerals	9.1	10.5
Metals and Manufactures	15.7	20.0
Vehicles and Parts	4.9	5.0
Chemicals, Drugs, Dyes and Medicines	3.0	6.0
Fertilizer and Fertilizer Materials	1.1	2.0
Textile Fiber and Manufactures	20.0	15.5

PHILIPPINE IMPORTS BY COMMODITY GROUPS JANUARY TO JUNE, 1950 AND 1949 (F.O.B. VALUE IN PESOS) (THOUSANDS)

	First Half		Value of Increase or Decrease	Relative Increase or Decrease Per cent
	1950	1949		
Total	374,187	628,126	253,939	— 40.4
Animals (Live)	91	187	— 96	— 51.4
Meat and Meat Products	1,255	6,216	— 4,961	— 79.8
Animal Oils and Fats Edible	33	132	— 99	— 75.2
Dairy Products	22,087	24,026	— 1,939	— 8.1
Fish and Fish Products	6,728	17,083	— 10,355	— 60.6
Other Edible Animal Products	612	4,754	— 4,142	— 87.1
Animal Products Inedible	6,289	8,865	— 2,576	— 29.1
Other Inedible Animal Products	1,119	789	+ 330	+ 41.8
Grains and Preparations	20,400	59,746	— 39,346	— 65.9
Vegetables and Preparations	2,811	10,916	— 8,105	— 74.3

Fruits and Preparations .	1,742	8,656	— 6,914	— 79.9
Nuts and Preparations...	114	682	— 568	— 83.3
Vegetable Oils and Fats, Edible	271	592	— 321	— 54.3
Cocoa, Coffee and Tea...	2,888	10,502	— 7,614	— 72.5
Spices	38	144	— 106	— 73.4
Sugar, Molasses and Syrups	1,088	5,215	— 4,127	— 79.1
Beverages, Wines and Liquors	2,790	4,916	— 2,126	— 43.2
Rubber and Manufacturers	9,988	16,672	— 6,684	— 40.1
Gums, Resins, Oils and Vegetable Wax	1,822	2,944	— 1,122	— 38.1
Roots, Herbs, Barks, Etc.	166	37	+ 129	+ 349.2
Tobacco and Manufactures	11,901	22,944	— 11,043	— 48.1
Seeds and Nursery Stock.	263	274	— 11	— 3.9
Miscellaneous Vegetable Products	790	523	+ 267	+ 51.1
Straw, Rushes and Palm Leaf and Manufactures.	79	38	+ 41	+ 107.0
Textile Fiber and Manufactures	58,208	124,594	— 66,386	— 53.3
Wood, Bamboo, Rattan & Reed Manufactures..	618	2,838	— 2,219	— 78.2
Cork and Manufactures..	179	79	+ 101	+ 128.5
Paper and Manufactures.	17,296	27,192	— 9,896	— 36.4
Non-metallic Minerals...	39,146	56,956	— 17,810	— 31.3
Metals and Manufactures.			— 24,133	— 24.5
Electrical Machinery and	74,543	98,677		
Apparatus	16,618	21,299	— 4,682	— 22.0
Vehicles and Parts	18,618	31,389	— 12,771	— 40.7
Chemicals, Drugs, Dyes and Medicines	22,130	18,769	+ 3,361	+ 17.9
Fertilizers and Fertilizing Materials.........	7,193	5,770	+ 1,422	+ 24.6
Explosives, Fireworks and Ammunitions	620	1,036	— 416	— 40.2
Pigments, Paints and Varnishes	4,630	6,274	— 1,644	— 26.2
Soaps and Toilet Preparations	1,129	5,685	— 4,557	— 80.1
Miscellaneous	17,894	20,717	— 2,822	— 13.6

B. PROSPECTS OF PHILIPPINE EXPORT TRADE AFTER 1954

The preferential trade between the United States and the Philippines before and after the war was the determining influence in the direction and composition of our foreign trade. The chief features of the export trade are: (1) the predominance of the United States as a market for exports and a source of imports, and (2) the overwhelming preponderance of raw materials among the articles for export, constituting no less than 95 percent of the total.

Before the war, exports to the United States constituted over 80 percent of the total trade. After the war, there was some reduction in the share of the U.S. in the total exports, but there is a noticeable trend towards restoration of the prewar position. Exports to the United States were 57 percent of the total in 1947; 66 percent in 1948 and 72 percent in 1949. This increasing share of the United States may be attributed to the rapid rehabilitation of the sugar industry, the market for which is exclusively the United States, the improvement in the world food situation, and the continued shortage of dollars which has reduced the demand for copra in Europe and other non-American markets. It this trend continues, it is reasonable to expect that by 1954 the percentage of export to the United States would be equal to if not greater than prewar figures.

The imposition of U. S. tariffs and the reduction of quotas on a graduated basis beginning in that year will have effects on Philippine exports varying from industry to industry or crop to crop according to competitive position, possible other markets, and the development of local manufacture. It is useful, therefore, to re-examine the prospects of the export industries after the imposition of tariff duties in 1954.

Among others, the Philippine Trade Act of 1946 provides that:

1. During the period from January 1, 1946 to December 31, 1973 the absolute quotas on sugar, cordage and rice are to be fixed as follows:

a)	Unrefined sugar	800,000 long tons
b)	Refined sugar	50,000 long tons
c)	Cordage	6,000,000 pounds
d)	Rice	1,040,000 pounds

From January 1, 1974 to July 3, 1974, the quotas will be one-half of the above amounts.

These products are to be subject to gradually increasing duties by 1954 and to full duties after 1974.

2. Beginning with the calendar year 1955 up to 1974, the duty-free quotas on the following articles would be decreased annually by five percent of the absolute quotas fixed for the years 1946-1954.

a)	Cigars	200,000,000 units.
b)	Scrap tobacco	6,500,000 pounds
c)	Coconut oil	200,000 long tons
d)	Pearl buttons	850,000 gross

Quantities over and above the duty free portion in any one year and up to the basic absolute quota may be admitted upon payment of the corresponding import duty at the time applicable to the Philippines subject to the graduated tariff.

3. All other exports are to be subject to graduated tariffs:

I. Principal export commodities:

1. **Sugar.** Prewar as well as postwar, the total Philippine exports of centrifugal sugar went entirely to the United States market. In 1949, the total value of centrifugal sugar exports was ₱90,464,340 or 18% of total exports. After the imposition of a tariif duty, could Philippine sugar still sell at a profit in the American market? The amount of the duty to be imposed is graduated year by year for 20 years and represents 5 percent each year of the lowest tariff imposed on sugar entering the United States from all sources which at present is the tariff imposed on Cuban sugar. The duty on Cuban sugar today is 50 cents per 100 lbs. or ₱1.40 per picul. Thus, the tariff would begin at 7 centavos per picul and would increase by that amount each year until the full tariff of ₱1.40 is reached in 20 years. Assuming an average New York landed price of 5-½ cents per lb. the tariff would be equivalent to about 4-½ percent advalorem by the end of the ten-year period and 9 percent ad valorem by the end of the 20-year period.

By itself, and provided present prices continue, the application of the tariff duty as now fixed, would not be so heavy a burden for the industry to bear, but when considered with the cost of shipping, the competitive position of Philippine sugar in the United States market would be weakened. Before the war, the principal sugar exporters to the United States were mainly Cuba, the Philippines, Peru and the Dominican Republic. Others were Java and Taiwan which exported to countries other than the United States. The stiffest competition for the American market will be from Cuba. The current freight on Philippine sugar to the Atlantic Sea board is $11.50 per long ton compared with the freight of $7.80 per long ton of Cuban sugar. It is, therfore, apparent that although Philippine sugar enters the United States at present free of duty and has seemingly an advantage of $.50 per 100 pounds over Cuban sugar, the differential is actually only about 33-½ cents per 100 pounds after taking the higher cost of freight into account.

With the imposition of progressive import duties on Philippine sugar, the advantage will be fully offset by 1967 when 70 percent of the United States tariff on Cuban Sugar or 35 cents per 100 pounds would be applicable to Philippine sugar. Thereafter, Cuba's advantage over Philippine sugar would increase progressively from year to year, unless the quota system is maintained. To minimize the impact of this graduated imposition of the tariff, the Philippines might do the following:

a) Secure a reduction in the cost of shipping;

b) Secure adequate quotas in the "free markets" under the international sugar agreement; and

c) Effect improvements inside the industry.

Reduction in the cost of shipping could be accomplished by the cooperation of steamship lines now carrying Philippine sugar cargoes.

Assuming continued existence of an international sugar agreement, the Philippines could secure an adequate quota in the "free markets" of the world to absorb part of its production. Among the countries in the surrounding areas, the following are possible markets for Philippine sugar:

1. Japan. Prewar, Japan's consumption of sugar amounted to over a million tons. With the loss of Taiwan (Formosa), Japan had to import 565,000 metric tons in 1948 from Cuba, China, Peru and Mexico. Japan is a potential market for Philippine sugar.

2. Ceylon. This country is traditionally an importer of sugar and currently requires around 100,000 tons of sugar annually. The bulk of Ceylon's needs has been supplied by Mauritius. It could take in a portion of Philippine sugar for the "free markets", perhaps on a barter basis in exchange for products that the Philippines might need and could buy advantageously from Ceylon.

3. Chile. In South America, Chile is the largest free sugar market importing approximately 150,000 metric tons, mainly from Peru. Chile is a producer of nitrogenous fertilizer needed by the Philippine sugar industry and here again, a barter arrangement might be effected.

Another form of adjustment which is decidedly preferable in the long run is the further improvement of the industry itself. It is interesting to note that sugar yields which averaged 50 to 60 piculs per hectare when the modernization of the industry was started in the Philippines, have been increased to almost double that amount by the introduction of better yielding cane varieties and better agricultural practices together with the extensive use of fertilizer. There is a great field for further improvement along these lines and it is believed that much can be done to reduce the cost of production by securing greater yields than those now prevailing.

2. **Cordage.** On cables or ropes, tarred or untarred, of two or more strands entering the United States market from countries other than the Philippines, an import duty of two cents per pound is imposed. On ropes with less than 3/4 inch diameter, the two-cents per pound import duty is imposed together with a 15 percent **ad valorem** tax. In 1941, the Philippines supplied 3,095,744 pounds of the total 3,397,888 pounds of rope with less than 3/4 inch diameter that the United States imported. The United Kingdom supplied 285,839 pounds. In 1947, the Philippines supplied the entire United States imports of rope with less than 3/4 inch diameter amounting to 662,410 pounds but in 1948 exports of the same commodity went down to 333,721 pounds or 92 percent of the total U.S. imports. The total cordage exports of the Philippines to the United States was 6,475,691 pounds in 1941; 2,012,371 pounds in 1947 and 1,534,379 pounds in 1948.

While the Philippines still dominate the trade in this product, the United Kingdom may accelerate her exports in 1954 when the graduated tariff duty is imposed. However, there is a likelihood that the demand after 1954 will still be great enough to absorb all the production of the United Kingdom and the Philippine cordage companies. Potential markets for Philippine rope are many. The limiting factor in the expansion of Philippine cordage imports of these markets is the scarcity of dollar exchange. When production shall have improved, these markets could be developed, possibly by means of barter trade relations. Before the war. Malaya purchased 6 percent of our total rope exports. In 1949 she increased her purchases to 18 percent. Other countries which were importing rope from the Philippines before and also after the war and whose purchases might be encouraged are Indonesia, Chile, Hongkong, British Africa, French East Indies, Arabia, Siam and Puerto Rico.

Much could be done to improve the production of cordage such as the introduction of more machineries in the manufacture of rope instead of the wooden handles now being used in most provinces to twist the cords that go into the making of ropes.

3. **Coconut Oil.** The Philippines supplied 87 percent of the total coconut oil imports of the United States in 1948 and in 1949, the entire

importation. As compared with coconut oil from other sources, Philippine coconut oil enjoys a 2-cent per pound differential in the processing excise tax levied by the United States on coconut oil. With the removal of this differential after 1974 and the imposition of tariff duties, Philippine coconut oil would be menaced by Indonesian and Ceylon coconut oil.

The demand for coconut oil by local manufacturers of fats and oil products is growing fast. This is due to the imposition of stringent import controls on soaps, pomades, edible oil product manufactures, etc. Coconut oil consumption by local soapers and edible oil products manufacturers is expected to reach from 68,000 to 70,000 long tons in 1950 as against 62,000 in 1949 and 40,800 in 1948. The increased local consumption is reflected partly in the decreased export records of coconut oil.

Possible markets that could be developed and which during the immediate postwar years have been made Philippine coconut oil conscious due to the inability of other supplying countries to export, are Italy, Germany, Switzerland, British Africa, Netherlands, Belgium and Denmark in Europe, Japan, Hongkong and Siam in Asia and the Far East.

4. **Cigars.** In 1941, the Philippines supplied 98 percent (free of duty) of the total cigar imports of the United States; Cuba's share was only 2 percent. During the war, Cuba strengthened her hold on the American market and in 1947 supplied 70 percent of its requirements while the Philippines contributed only 26 percent. In 1948, the share of Cuba increased to 87 percent and that of the Philippines went down further to 12 percent.

With the reduction of the duty-free quota beginning after 1954, Philippine participation in the United States market may be reduced further unless necessary steps are taken. The following measures may help bring back the industry to its prewar position in the Philippine economy:

a) Lower cost of production by internal improvements in the industry itself;

b) Expand other markets by barter agreements;

c) Stimulate further local consumption.

Other markets which since the prewar period have imported cigars from the Philippines, are the following: China, Hongkong, Hawaii, Denmark, Spain, Australia, Great Britain, Guam and Japan.

In spite of the weakening of cigar exports, local production could still expand, bolstered by the local demand for cigars which has increased as a result of import control. Local consumption has increased from 36 percent of the total prewar production to 96 percent in 1949 as shown below:

PERCENTAGE OF DISTRIBUTION OF CIGAR PRODUCTION PREWAR AS COMPARED WITH POSTWAR
(Yearly Average)

Item	Prewar 1937-1941	Postwar 1946-1949
Production	100%	100%
Exported	64	4
Locally Consumed	36	96

5. **Pearl Button.** Pearl buttons are decorative items which depend for their demand in the United States market upon the whims and fancies of consumers. They may find competition with Japanese production but improvement of the quality of products and advertising campaigns may help keep the American market.

II. Other Important Export Products Subject to Graduated Tariff Duties:

a. **Products 100 percent of which are exported to the United States:**

1. Canned pineapple is one of the three products which the Philippines export entirely to the United States. In 1949, the total canned pineapple exported by the Philippines was ₱13.7 million. There is not much fear of competition from the Hawaiian Islands inasmuch as the demand in the United States is believed to be large enough to absorb the production of both countries.

2. Embroideries are luxury items which at present only the United States buys. Before the war, the Philippines was almost the exclusive exporter of embroideries to the United States with very little imports from Puerto Rico and Europe. The war, however, cut off the Philippine supply and the development of this handicraft and specialized product in Puerto Rico was stimulated and is giving Philippine embroideries stiff competition. Standardization and better organization is needed in local production in order to meet this competition. For possible markets outside the United States, Denmark and some Far Eastern countries as Hongkong, Indonesia and Australia are probably the most promising of expansion. Of the total embroideries exported in 1949 the United States took 99.8 percent.

3. Cotton and cloth manufactures include articles most of which are products of handicraft industries such as laces, Ilocano cloths, linen (tablecloth, napkins, etc.), piña cloth, mats, pocketbooks, wallets, etc. which are specialized goods. Being highly specialized, there is no problem of markets for the present quantities being produced nor of the loss of the American market after the imposition of tariff duties. To keep and expand the United States market even after 1954, an intensive advertising campaign should be carried out for these products.

b. **Products 50 percent or more of which are exported to the United States:**

In this category belong abaca unmanufactured (52%), copra (51%), base metals, ores and concentrates (67.2%), logs, timber and lumber (59.5%).

1. Copra, Desiccated Coconut and Copra Meal and Cake: Ninety-nine percent of the United States requirements of copra was supplied by the Philippines for the years 1946, 1947 and 1948. The threat of competition in the American market comes from Ceylon and Indonesia, although such threat is minimized by the U.S. excise tax differential that Philippine copra enjoys and the fact that no export tax is imposed on it. Assuming, however, the possibility of stiff Indonesian competition after 1954, Philippine copra could still sell well if greater efforts are exerted to improve quality and if a more intensive utilization of by-products is undertaken. Again, the local demand which is fast developing as a result of the increased manufacture of fats and oil products, may cushion the reduction in exports and thus maintain the present high levels of production.

Comparing the 1940 and the postwar trade in the Philippine copra, it appears that the share of other countries particularly the European countries in total exports have increased. Japan in the Far East and the OEEC countries in Europe were heavy buyers of the Philippine copra. It is true that the increase in the purchases of these countries was due to world shortage of fats and oils, yet the possibilities of developing them further as markets for Philippine copra are good.

2. The position of abaca in the United States market is being seriously threatened by plantings in new areas sponsored by the U.S. government. Before the war Philippine abaca competed with that of Java, Borneo, and Sumatra but World War II practically wiped out all of these countries from the market. Aside from the competition that would be offered directly by the future Latin-American expanded production of abaca, competition would be given abaca in the world markets for hard fibers by sisal and henequen. The biggest producer of sisal is East Africa and of henequen, Mexico. While sisal approaches abaca in quality,

both sisal and henequen are still inferior when compared with abaca fiber in tensile strength, sheen and quality. The relative cheapness, however, of these substitutes together with the scarcity of dollar exchange may force other markets to turn to these products.

3. Base metals and ores might be affected in the United States market but there are other markets such as Japan and other Far Eastern countries which could be encouraged and developed.

4. Before the war, the Philippines, by virtue of the free trade arrangement, supplied the bulk of United States imports of the planed lumber group which included lauan. In 1941, the Philippines supplied 39,737 million board feet (as against only 4,186 million board feet by Canada) of the total United States imports of 47,791 million board feet. After the war, Philippine exports declined to 9.023 million board feet and ranked second to Canada which supplied 62,632 million board feet in 1948. With respect to hardwoods, the Philippines was the third leading supplier with Canada and Nicaragua ahead in 1941 and in 1948 supplanted Canada as the principal supplier. Thus, with the imposition of tariff duties, competition may be met from Canada and Nicaragua and possibly, South America. Japan is a big market for Philippine logs and there are other potential markets in Asia. Further researches in expanded utilization of hardwoods should be undertaken.

c. Products below fifty percent of which are exported to U.S.:

1) Rattan furniture finds its market in the West Coast and in Hawaii. Here competition is offered by similar products of Puerto Rican and Carribean origin. Inasmuch as Puerto Rico's products will remain duty-free, the Philippine rattan furniture industry will have to produce better models and better qualities in order to compete after 1951. Potential markets could be developed around the Mediterranean and also in the Far East in such countries as Italy, Spain, Portugal, India, Panama, Japan and Hongkong.

Possibilities of Market Expansion in Hard-Currency Areas

In 1948 and 1949, the Philippines traded with the following hard-currency countries other than the United States: Canada, Switzerland, Belgium, Luxembourg, Portugal, the Dominican Republic, Panama (Canal Zone), Alaska, Mexico, Cuba, Venezuela, El Salvador and the Honduras. There was a deficit in the trade with Canada, Switzerland, Dominican Republic, Belgium, Portugal, Luxembourg, and Mexico of ₱32,792,185 and a trade surplus with Panama, Alaska, Cuba, Venezuela, Portuguese Africa, El Salvador and Honduras of only ₱204,747.

In 1949, the Philippines exported only ₱7.1 million to Canada and imported ₱26.3 million, having a trade deficit of ₱19.2 million. Philippine exports to Canada consisted mainly of copra, abaca, desiccated coconut, base metals and hardwoods. Switzerland imported from the Philippines shells and manufactures, cigars, coconut oil and desiccated coconut totalling ₱6.2 million and exported to the country cotton and manufactures, rayon and other synthetic textiles, machine and parts, dairy products, electrical machinery and chemicals, worth ₱9.9 million, registering a deficit of ₱3.7 million. With Belgium, the Philippines had a trade deficit of ₱8.8 million in 1949 and the biggest Philippine export to Belgium consisted of copra which amounted to ₱2.8 million, abaca, desiccated coconut, coconut oil, scrap metals and cigars with values less than a million pesos. With Mexico, Portugal and the Dominican Republic, the Philippines has a deficit of less than half a million pesos with each country, but these markets could further be expanded as buyers for rattan furniture, embroideries and shells and manufactures.

Effects of the Annecy Tariff Agreements Entered into by the United States on Philippine Exports

Under the tariff agreements reached at Annecy, France, during April to August, 1949, the United States granted tariff concessions to various countries in exchange for reciprocal tariff grants. What will be the effects of these tariff grants on the position of Philippine export products in the United States market?

The import duty on coconut oil was reduced from 2 cents per pound as provided for in the United States Tariff Act of 1930 to only one cent. However, the processing tax of 5 cents per pound levied on coconut oil of non-Philippine origin which cannot be reduced by a trade agreement will continue, thus, maintaining the 2-cent-per-pound differential in favor of Philippine coconut oil.

The volume of exports of the other supplying countries which compete with the Philippines in the United States market for cigars, scrap tobacco, rope and mahogany may be increased by the reduction in tariff duties.

The duty on cigars from Cuba, for instance, was reduced from $1.80 per pound and the 10 percent ad valorem tax, to $1.50 per pound and the same additional tax per pound. This tariff cut may further boost the cigar export trade of Cuba to the United States.

With respect to scrap tobacco, the duty on Cuban product was reduced from 28 cents per pound, the previous treaty rate, to 14 cents per pound. The ordinary rate provided for in the U.S. Tariff Act is 35 cents per pound.

Mahogany lumber, if rough or in the form of flooring, is subject to an ad valorem tax and also an import excise tax. If the lumber is planed or dressed and not in the form of flooring it is subject to the import excise tax only . The duty and tax on rough lumber was reduced from 7-½ per cent ad valorem plus $1.50 per 1,000 board feet to 5 percent ad valorem plus 75 cents per 1,000 board feet.

The rate of duty on rope made of Manila hemp or any hard fiber and with a diameter smaller than 3/4 of an inch in the United States Tariff Act is 2 cents per pound and an ad valorem tax of 15 percent. The 2 cents rate was maintained but the ad valorem duty was reduced to 10 percent only. The import duty on cords and twine of hard fiber like hemp was also reduced from 20 percent to 15 percent ad valorem. The Philippines is not affected in this line, the value of exports being very small. Mexico, which is producing henequen fiber, was the principal supplier in 1947 while Cuba was second. In 1948, Canada displaced Cuba as the second leading exporter to the United States of cords and twines. Mexico, as in the previous year, was the principal supplier.

TEN PRINCIPAL EXPORTS OF THE PHILIPPINES BY COUNTRY OF DESTINATION, ANNUALLY, 1940, 1948 — 1949

(In Thousands of Pesos)

	1940		1948		1949	
COUNTRY OF DESTINATION	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
TOTAL EXPORTS[a] ..	236,049	100.0	635,583	100.0	507,510	100.0
TOTAL OF 10 PRINCIPAL EXPORTS...	179,005	75.0	547,753	86.2	441,997	87.1
1. COPRA, TOTAL.	18,803	100.0	309,400	100.0	179,286	100.0
United States..	12,383	65.8	181,154	58.6	118,723	66.2
France	2,616	13.9	30,031	9.7	8,624	4.8
Poland	——	—	14,357	4.6	912	0.5
Japan	6	[2]	13,940	4.5	3,391	1.9
Denmark	173	1.0	10,670	3.5	4970	2.8
Italy	370	2.0	9,327	3.0	8,911	5.0
Canada	——	—	8,955	2.9	4,604	2.6
Germany	——	—	8,919	2.8	10,211	5.7
Austria	——	—	5,864	1.9	922	.5
Netherlands ..	——	—	4,537	1.5	2,633	1.5
Other Countries	3,255	17.3	21,646	7.0	15,385	8.5
2. ABACA, UNMANUFACTURED, TOTAL	25,396	100.0	60,294	100.0	57,801	100.0
United States..	10,594	41.7	30,378	50.4	27,815	48.1
Japan	5,960	23.5	11,548	19.2	11,014	19.1
Great Britain.	5,025	19.8	5,031	8.3	4,771	8.2
Denmark	49	0.2	2,317	3.8	1,602	2.8
Norway	93	0.4	2,283	3.8	555	1.0
Germany	——	—	1,904	3.2	2,273	3.9
Belgium	9	[2]	1,415	2.3	853	1.5
Canada	436	1.7	795	1.3	1,280	2.2
Hongkong	260	1.0	654	1.1	1,215	2.1
France	187	0.7	640	1.1	2,446	4.2
Other Countries	2,783	11.0	3,328	5.5	9,977	6.9

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[a] Exclusive of gold.

[2] Less than .01 percent.

Country of Destination	1940		1948		1949	
	Value	Percent	Value	Percent	Value	Percent
3. DESICCATED COCONUT, TOTAL.	7,382	100.0	57,491	100.0	38,733	100.0
United States..	7,369	99.9	56,124	97.6	37,539	96.9
Canada	——	—	1,165	2.0	949	2.5
Norway ..	——	—	100	0.2	——	—
Hawaii	——	—	75	0.1	35	0.1
Belgium	——	—	27	0.1	172	0.4
Other Countries	13	0.1	——	—	38	0.1
4. SUGAR, CENTRIFUGAL, TOTAL..	86,170	100.0	41,580	100.0	90,464	100.0
United States..	86,170	100.0	41,580	100.0	90,464	100.0
France	——	—	[1]	[2]	——	—
Netherlands ..	——	—	[1]	[2]	——	—
Hawaii	——	—	——	—	——	—
Other Countries	[1]	[2]	——	—	——	—
5. COCONUT OIL (Inedible and Edible), TOTAL.	19,724	100.0	40,739	100.0	35,018	100.0
United States..	16,248	82.4	38,055	93.5	27,709	79.2
Italy	273	1.4	1,274	3.1	2,326	6.6
British Africa.	144	0.7	590	1.5	834	2.4
Venezuela	——	—	445	1.1	——	—
Austria	——	—	118	0.3	——	—
British West Indies	——	—	100	0.2	——	—
Arabia	——	—	68	0.2	——	—
Haiti	——	—	46	0.1	——	—
Japan	[1]	[2]	17	[2]	36	0.1
Guam	——	—	15	[2]	9	[2]
Other Countries	3,058	15.5	11	[2]	4,104	11.7

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[a] Exclusive of gold.

[1] Less than 1 thousand pesos.

[2] Less than .01 percent.

Country or Destination	1940		1948		1949	
	Value	Percent	Value	Percent	Value	Percent
6. EMBROIDERIES, TOTAL	9,177	100.0	13,917	100.0	11,969	100.0
United States	9,177	100.0	13,906	99.9	11,945	99.8
Guam	—	—	8	0.1	10	0.1
Hawaii	—	—	3	[2]	12	0.1
Panama, Canal Zone	—	—	[1]	[2]	—	—
Australia	—	—	[1]	[2]	—	—
Denmark	—	—	[1]	[2]	—	—
Other Countries	—	—	—	—	2	[2]
7. PINEAPPLE, CANNED, TOTAL	4,998	100.0	7,648	100.0	13,676	100.0
United States	4,998	100.0	7,648	100.0	13,676	100.0
Other Countries	[1]	[2]	—	—	—	—
8. COPRA, MEAL OR CAKE, TOTAL	2,741	100.0	7,425	100.0	5,859	100.0
Denmark	340	12.4	2,473	33.3	1,509	25.8
Sweden	97	3.5	2,300	30.9	—	—
United States	2,285	83.4	1,799	24.3	4,191	71.5
Netherlands	—	—	707	9.5	60	1.0
Belgium	—	—	91	1.3	—	—
France	—	—	39	0.5	—	—
Italy	—	—	16	0.2	—	—
French Africa	—	—	[1]	[2]	—	—
Norway	—	—			—	—
Norway	—	—	—	—	—	—
Finland			—	—		
Other Countries	19	0.7	—	—	99	1.7

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[a] Exclusive of gold.

[1] Less than 1 thousand pesos.

[2] Less than .01 percent.

Country or Destination	1940		1948		1949	
	Value	Percent	Value	Percent	Value	Percent
9. **Chromite, Total**	3,894	100.0	5,192	100.0	5,565	100.0
United States..	3,165	81.2	4,780	92.1	5,124	92.1
Great Britain..	84	2.2	356	6.8	359	6.4
Japan	640	16.5	56	1.1	——	—
Belgium	——	—	[1]	[2]	——	—
Other Countries	5	0.1	——	—	82	1.5
10. **Rope, Total** ..	3,471	100.0	4,067	100.0	3,626	100.0
Malaya	234	6.8	903	22.2	641	17.7
United States..	1,488	42.9	689	18.9	984	27.1
Dutch East Indies	266	7.7	660	16.2	242	6.7
Chile	130	3.7	272	6.7	177	4.9
Hongkong	108	3.1	232	5.7	51	1.4
British Africa.	20	0.6	213	5.2	——	—
French East Indies	35	1.0	192	4.7	155	4.3
Arabia	3	0.1	180	4.4	210	5.8
Siam	174	5.0	134	3.3	93	2.6
Porto Rico.....			117	2.9	175	4.8
Other Countries	1,013	29.1	475	11.8	898	24.7

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[a] Exclusive of gold.

[1] Less than 1 thousand pesos.

[2] Less than .01 percent.

CHAPTER VII

THE REVISED ECONOMIC REHABILITATION AND DEVELOPMENT PROGRAM

A. Reasons for Revising the Program

Trade and financial develoments during 1949 have led to a position and prospects at the end of the year which differed widely from expectations held in 1948. The change has been such as to increase materially the difficulties of providing the funds for the import and local requirements of the development program.

Export proceeds fell below 1948 levels by approximately ₱123 million. There was a decline in the disbursements of the United States Government of around ₱30 million. The net decline in total receipts was about ₱366 million. On the other hand, imports were maintained at practically the same level as 1948 and there were increases in other payments which resulted in an increased total payments of around ₱35 million over 1948. The total deficit in the balance of payments during the year has been estimated tentatively at ₱313 million. There was not much change in 1949 in the proportion of capital goods to total imports.

In spite of increases in revenue from taxation, the increase in government expenditures was such that a substantial budgetary deficit was incurred. It is doubtful whether in the next two or three years, any substantial amounts could be expected from budgetary sources for development purposes.

With respect to capital from private sources, the prospects have also materially changed. New corporate capital is forming at a decreasing rate. The excess reserves of banks have declined substantially from the high peaks of the summer of 1948. Savings and time deposits while exhibiting a remarkable increase during 1949, appear to have begun falling off by the end of the year. Total U.S. Government payments in 1950 is estimated to be around ₱100 million below the 1949 level.

On the other hand, in late 1949, the government moved aggresively to institute strict trade controls and exchange control. The printing of rehabilitation and development bonds would be finished by July, 1950 and a vigorous campaign of selling them to financial institutions and the public would then begin. These measures coupled with Central Bank action to restrict credit for consumer financing and further extension of bank facilities to the provinces could result in 1950 in a substantial diversion of excess purchasing power into development projects and in a wiser utilization of foreign exchange resources.

The foreign exchange difficulties in which the Philippines is now involved is the principal bottleneck in the achievement of the investment targets originally planned. Ever since the imposition by the Government of trade and exchange controls capital which is idle in many private hands or which was active in the past in financing import activities is gradually being diverted into agricultural, manufacturing and service enterprises. Many new firms have been organized and have set up industries which give promise of substantially making up for the reduction in the import level. The attached list of new industries established since January, 1950 is illustrative of developments in this field.

It is probable, however, that even with this healthy trend in domestic investment the targets set originally would be difficult to achieve with domestic resources alone without any measure of assistance whether in the form of credits or of grants from abroad. Consequently, the remaining phases of the economic development program had to be reviewed in order to limit targets within the range that could be supported with means which the Philippine Government might be able to raise both locally and otherwise.

INVESTMENTS OF MANUFACTURING FIRMS IN VARIOUS INDUSTRIAL PROJECTS
FIRST HALF, 1950

Major Industrial Group	Total	Actual investment of new firms	Increased capital expenditures of old firms
TOTAL	₱ 4,150,833.16	₱11,242,576.79	₱ 2,908,256.37
Food and kindred products:	₱ 1,376,879.74	₱ 1,188,679.18	₱ 188,200 56
Corporation	367,797.86	179,597.30	188,200 56
Partnership	43,250.00	43,250.00	---
Sole Proprietorship	965,831.88	965,831.88	---
Tobacco manufactures:	₱ 2,568,250.00	₱ 2,883,250.00	₱ 60,000.00
Corporation	1,758,250.00	2,073,250.00	60,000.00
Partnership	240,000.00	240,000.00	---
Sole Proprietorship	570,000.00	570,000.00	---
Textile - mill products:	₱ 1,638,748.19	₱ 1,638,748.19	₱
Corporation	1,282,500.00	1,282,500.00	---
Partnership	---	---	---
Sole Proprietorship	356,248.19	356,248.19	---
Apparel and other finished products made from fabrics and similar materials:	₱ 1,786,674.53	₱ 1,786,674.53	₱ ---
Corporation	17,250.00	17,250.00	---
Partnership	498,924.53	498,924.53	---
Sole Proprietorship	1,270,500.00	1,270,500.00	---
Lumber and timber basic products:	₱ 39,300.00	₱ 39,300.00	₱
Corporation	20,000.00	20,000.00	---
Partnership	---	---	---
Sole Proprietorship	19,300.00	19,300.00	---
Furniture and finished lumber:	₱ 261,073.89	₱ 261,073.89	₱ ---
Corporation	64,250.00	64,250.00	---
Partnership	30,000.00	30,000.00	---
Sole Proprietorship	166,823.89	166,823.89	---
Paper and allied products:	₱ 498,000.00	₱ 498,000.00	₱
Corporation	429,000.00	429,000.00	---
Partnership	60,000.00	60,000.00	---
Sole Proprietorship	9,000.00	9,000.00	---
Chemicals and allied products:	₱ 1,131,229.64	₱ 158,521.00	₱ 972,708.64
Corporation	985,208.64	12,500.00	972,708.64
Partnership	70,000.00	70,000.00	---
Sole Proprietorship	76,021.00	76,021.00	---
Products of petroleum, coal, and natural gas:	152,327.25	₱ 11,000.00	₱ 141,327.25
Corporation	152,327.25	11,000.00	141,327.25
Partnership	---	---	---
Sole Proprietorship	---	---	---

(Cont'd.)

INVESTMENTS OF MANUFACTURING FIRMS IN VARIOUS INDUSTRIAL PROJECTS
FIRST HALF, 1950

Major Industrial Group	Total	Actual investment of new firms	Increased capital expenditures of old firms
Rubber products:	₱ 299,712.19	₱ 213,800.00	₱ 85,912.19
Corporation	239,712.19	153,800.00	85,912.19
Partnership	---	---	---
Sole Proprietorship	60,000.00	60,000.00	---
Leather and leather products:	₱ 70,700.00	₱ 70,700.00	₱ ---
Corporation	---	---	---
Partnership	---	---	---
Sole Proprietorship	70,700.00	70,700.00	---
Stone, clay, and glass products:	₱1,166,997.00	₱ 162,000.00	₱ 1,004,997.00
Corporation	1,009,997.00	5,000.00	1.004,997.00
Partnership	---	---	---
Sole Proprietorship	157,000.00	157,000.00	---
Iron and steel and their products:	₱1,290,435.73	₱ 985,925.00	₱ 379,510.73
Corporation	1,108,435.73	803,925.00	379,510.73
Partnership	115,000.00	115,000.00	---
Sole Proprietorship	67,000.00	67,000.00	---
Electrical machinery:	₱ 100,000.00	₱ 100,000.00	₱ ---
Corporation	---	---	---
Partnership	---	---	---
Sole Proprietorship	100,000.00	100,000.00	---
Transportation equipment (except automobiles):	₱ 2,905.00	₱ 2,905.00	₱ ---
Corporation	2,905.00	2,905.00	---
Partnership	---	---	---
Sole Proprietorship	----	---	---
Nonferrous metals and their products:	₱ 5,000.00	₱ 5,000.00	₱ ---
Corporation	5,000.00	5,000.00	---
Partnership	---	---	---
Sole Proprietorship	---	---	---
Miscellaneous manufacturing industries:	₱1,312,600.00	₱ 1,237,000.00	₱ 75,600.00
Corporation	890,100.00	814,500.00	75,600.00
Partnership	50,500.00	50,500.00	---
Sole Proprietorship	372,000.00	372,000.00	---

B. The Revised Agricultural Development Program

Summary

1. The Revised Production Goals

The over-all crop production goal is 7.12 million metric tons of foodstuffs and export crops which will mean a total production of 112 percent of the pre-war volume, or an increase of 31 percent over that of 1949.

a. Food crops — The principal food crops led by rice and corn, fruits and vegetables, would be increased to 4.96 million metric tons by 1954, or an increase of 27 percent over that of 1949; this volume of production is about 128 percent of the pre-war output. The food production target for 1954 will satisfy total domestic requirements to the extent of about 95 percent.

The production of rice would be increased to 70.7 million cavans of palay (3.1 million metric tons) by 1954, or an increase of 24.9 percent over that of 1949. This rice production will satisfy the total consumption requirements of the population and leave about 1 percent for export. Under this program, it is contempeated that the country would be self-sufficient in rice by 1952, with a production target of 66.5 million cavans (23.93 million metric tons) of palay.

b. Technical or export crops — The total production of technical or export crops would be increased to 2.16 million metric tons, or an increase of 40 percent over that of 1949. This volume of production is about 109 percent of the pre-war level. In the case of sugar, production is expected to reach the pre-war level by 1953, so it is hoped that beginning that year the Philippines will export its full quota to the United States. On the whole, the program from 1950 to 1954 aims at increasing production of export crops to reach at least the pre-war level. Naturally, the trend of development of the export industries will depend very largely upon the market price situation in the principal world markets.

c. Livestock production — Livestock production would be increased so as to reach the pre-war level between 1953 and 1954. Local meat and poultry production is expected to reach the 1940 level by 1952 and will continue to increase in direct proportion to the growth of the livestock population. The 1954 target for meat and poultry production is 279,308 metric tons, or about 90 percent of total domestic requirements for these products. The production goal for livestock will depend primarily upon satisfactory solutions to the problems of feed and pasture production.

d. Fish production — The production of fish will be increased to 321, 800 metric tons, or about 90 percent greater than the pre-war production of 170,000 metric tons. This will mean more fish in the Filipino diet which is now largely deficient in animal protein.

e. Lumber production — Based on present trends, production of lumber and timber may reach 1,210 million board feet by 1954, of which 140 million board feet will be for export and 1,070 million board feet for domestic consumption. The pre-war lumber and timber production, which was exceeded in 1948, amounted to 898 million board feet. Lumber production could be increased in five years to as high as 100 percent greater than prewar output if lumber exports would pick up and domestic demands for construction purposes would increase accordingly.

2. Production in relation to requirements

Based on per capita consumption (net disappearance) of 303 kilograms per caput in 1940, our total food requirement in 1954 is estimated at 5.21 million metric tons. The production target for the same year is expected to reach 95 percent of these requirements. In 1949, total food production (excluding sugar) reached 82 percent of the total requirements on the same per capita basis.

The estimated pre-war consumption per caput of 303 kilograms is the same as that in Indonesia, although lower than that in Japan and China. From the nutritional standpoint, the average Filipino diet consisting of 45 percent cereals, 13 percent root crops,, 10 percent fish and animal products, 7 percent fruits and vegetables, and 25 percent all others, is somewhat deficient in fruits and vegetables and is far from satisfactory in milk and dairy products, fish and meat which are the principal sources of animal protein. It is heavily weighted with starchy foods.

While the primary emphasis in the proposed agricultural program is to attain as fast as possible the quantitative requirements of the average Filipino diet, some place is being given to the improvement of the diet from the qualitative or nutritional standpoint by increasing production of fruits and vegetables, meat, milk and other protective foods.

3. Financial requirements

In order to carry out the five-year program of agricultural development, it is estimated that a total outlay of ₱554.3 million is necessary, of which dollar expenditures amount to $90.2 million and peso expenditures, ₱373.8 million.

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The total outlay may be broken down as follows:

	TOTAL	1950	1951	1952	1953	1954
			(million pesos)			
Total Outlay	554.3	125.1	114.5	109.5	104.1	100.9
Development projects	401.5	93.8	84.3	78.8	73.8	70.8
Public services in agriculture	150.1	30.8	29.7	30.2	29.8	29.5
Experts and training	2.7	0.5	0.5	0.5	0.5	0.5

(In thousands)

	TOTAL	1950	1951	1952	1953	1954
GRAND TOTAL	554,333	125,147	114,515	109,580	104,174	100,917
Peso requirement	373,847	75,779	77,273	73,578	73,554	73,663
Dollar requirement	180,486	49,368	37,242	36,002	30,620	27,254

It may be noted that the proposed expenditures for government services in agriculture, as well as for the use of foreign experts and the training abroad of employees now in service under a cooperative arrangement with the United States Government, may be included in the annual budgetary outlays of the National Government. The capital outlays for the development of existing and of new enterprises in agriculture have to be provided out of funds intended for national economic development.

A detailed classification of the estimated capital investment for the development of agricultural industries for the period 1950-54, amounting to ₱401.5 million, may be indicated as follows:

	TOTAL	PESO REQUIREMENTS	DOLLAR REQUIREMENTS
	(MILLIONS)	(MILLIONS)	(MILLIONS)
Estimated Total Investment	₱401.5	₱235.5	$ 82.9
Purchase of land, construction of buildings, roads, etc.	36.3	30.4	2.9
Purchase of agricultural machinery	177.5	55.4	61.1
Purchase of work animals and other livestock	29.7	25.4	2.1
Purchase of seeds, fertilizers, insecticides, biologics, and other supplies	128.1	96.4	15.8
All others	29.9	27.9	1.0

4. Measures for the Attainment of Production Goals

In order to achieve the production targets beginning in 1950 and up to 1954, definite measures have to be taken right away, principal among which are the improvement in the public administration for agriculture, the promotion of better production efficiency, and the provision of adequate funds for investment in agricultural development projects and for the operation of essential public services in agriculture. Long term measures for correcting deficiencies and maladjustments in agriculture, including the high level of illiteracy, the backwardness and inadequacy of present farm practices, the unsatisfactory land tenure systems, and others, have to be adopted also.

Among the measures requiring immediate attention, the following may be emphasized:

a. Improvement of the public services for the promotion of agricultural production and agricultural development is the first imperative. This calls for the reorganization of the Department of Agriculture and Natural Resources, in which immediate attention will be directed along the following lines:

(1) Creation of a Bureau of Agricultural Extension under the Department of Agriculture and Natural Resources. All the extension activities now being undertaken by different bureaus or agencies should be consolid-

ated and coordinated under the said Bureau to the end that the vital problems of promoting better farm practices, improving the level of understanding and the standards of living in the rural areas, and overcoming the handicaps of deeply-rooted deficiencies in the socio-economic structure of the rural communities may be solved in a systematic and effective manner.

(2) Establishment of an Office of Research Coordination in the Department of Agriculture and Natural Resources under which the agricultural research work of the bureau and agencies shall be coordinated and strengthened for the solution of the varied problems of technical agriculture. The agricultural experiment station in the College of Agriculture at Los Baños should be continued and maintained as an independent unit under the University of the Philippines and should be provided adequate funds; it should maintain close liaison with the Department of Agriculture and Natural Resources for the proper dissemination of research information for effective extension work among farmers. (See Appendix—Agricultural Research in reference to Dean Uichanco's letter regarding the requirements of the College of Agriculture.)

(3) Coordination and strengthening of the government agencies and entities engaged in the marketing and distribution of agricultural products with a view to improving the services in the marketing of agricultural products and by-products and enabling the farmers to obtain a higher income from their produce. The merchandising functions and acti vities of the various government corporations should be coordinated under the control and supervision of the Department of Agriculture and Natural Resources.

b. Provisions for an adequate system of agricultural credit with a view to solving the problems of financing which confront especially the small farmers who need from time to time modest amounts of crop loans and other agricultural credits with which to carry on their operations and marketing activities. The Rehabilitation Finance Corporation should extend its operations in providing long-term agricultural credit in the principal producing areas by the opening of additional branches and agencies. The Philippine National Bank should enlarge the scope of its short-term credit (crop loans) to small farmers and loans to agricultural cooperatives by the establishment of additional branches, paralleling those established by the Rehabilitation Finance Corporation.

c. Putting into cultivation formerly cultivated areas not producing at present as the shortest cut to the increased production of food crops, particularly of rice and corn. Increased plantings of other food crops such as fruits, tubers, vegetables and beverage crops should be attained as part of the general food production campaign. In increasing the area of food crops, provision will have to be made for increasing the production of feed and pasture for livestock so as to ensure achievement of the production targets in livestock and poultry.

d. Production efficiency in agriculture, particularly in the food crops and technical crops, will be attained by measures that will raise the rate of yield per unit area through the use of improved irrigation facilities, the replacement of inferior varieties with superior ones, the proper use of commercial fertilizers, and the effective control of pests and diseases. In all these measures the work of the proposed bureau of agricultural extension and the coordinated research work in agriculture would contribute most beneficially.

e. In order to encourage the shifting of the excess farm population from the congested regions to the unsettled areas, particularly Mindanao, the survey and subdivision of public agricultural lands will have to be accelerated, financial and technical assistance extended to settlers, and priorities given to the construction of new roads in Mindanao. Together with the adoption of necessary tenancy reforms, the movement of the farm population from the over-crowded areas to Mindanao and other sparsely settled areas will help solve many of the socio-economic problems confronting the Government.

f. Improvement and development of the livestock industry will depend largely on the importation of superior breeds of animals for breeding purposes, the success of grading and selection and the distribution of the improved breeds, the adoption of scientific methods of feeding, effective control of animal diseases, increased production of feed and better pasture management. Again, the contributions from the extension service and the experiment station will be of vital importance to this work.

g. Allotment of adequate funds, both for the public services essential to agricultural development and for the capital requirements of both private and public agricultural development projects, is necessary if the minimum targets in agricultural production and development are to be attained.

5. Administrative Organization

The follow-up and implementation of the agricultural development program will be done through three principal agencies of the government namely, the Department of Agriculture and Natural Resources and its bureaus and agencies, the National Economic Council, and the government financial institutions. The following steps may be indicated:

1. Priorities of and allocations for the various agricultural projects will be recommended by the National Economic Council to the President whose approval will be final.

2. On the basis of the allocations, the justification for the particular projects, including detailed studies thereof, will be prepared by the private enterprise concerned or by the public agency understanding a development project and submitted to the National Economic Council for approval. The National Economic Council will in turn recommend the projects for approval or disapproval of the President.

3. Release of funds for approved government projects will be made direct to them or through the Rehabilitation Finance Corporation. For projects under individual private enterprise, release will be made through the Rehabilitation Finance Corporation and the Philippine Naional Bank.

For government projects, the following agencies will be involved:

a. Bureau of Plant Industry — seedling banks for abaca, ramie and jute (saluyot) and seed propagation stations for the various field crops and fruit trees.

b. Bureau of Animal Industry — Importation and distribution of improved breeds of livestock and poultry, breeding stations and livestock farms.

c. Bureau of Fisheries — breeding stations, distribution of fish fry, developing uses of fish by-products.

d. Fertilizer Administration — importation and distribution of fertilizers.

e. Irrigation Administration — purchase, installation and servicing of irrigation pumps.

f. Government-owned corporations (to devote more attention to their service functions and to be dissuaded or prohibited from undertaking commercial activities and development projects):

(1) National Coconut Corporation (NACOCO)
(2) National Abaca and Other Fibers Corporation (NAFCO)
(3) National Tobacco Corporation (NATOCO)
(4) Philippine Relief and Trade Rehabilitation Administration (PRATRA)
(5) National Rice and Corn Corporation (NARIC)

For private projects, long-term capital loans will be made available through a government development agency[a] and/or the Rehabilitation Finance Corporation, and short-term operating loans through the Philippine National Bank.

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[a] A good example is the work being done by the National Development Company for the Capiz fish ponds.

4. The follow-up of the loans granted and the adherence by the loan recipients and the government agencies concerned to the priorities and policies laid down by the National Economic Council will be the responsibility of the Secretary of Agriculture and Natural Resources, who will act through the bureaus and agencies under his department. For the over-all coordination of promotional and educational work among the farmers in the rural communities, two agencies of that Department will have to be expanded and strengthened:

(a) Agricultural extension service

(b) Agricultural research

The extension service will also assist the Rehabilitation Finance Corporation and the Philippine National Bank in following up the activities of the rank and file of individual producers and enterprises for which loans have been made for the over-all development of agriculture and specifically for the attainment of the objectives of the short-term development program.

For a more detailed exposition of the over-all reorganization of the Department of Agriculture and Natural Resources in order to effectuate an efficient public administration in agriculture, please refer to the appended program.

C. The Revised Industrial Program

Summary

The industrial program submitted in 1948 has been revised to provide for the needs of the remaining four years and to adjust it to the conditions prevailing at present.

The 1948 industrial program contemplated a total capital investment of $181,925,000 to be spent until 1952 of which $110,145,000 will be the needed foreign exchange. This amount represented the sum total of capital investment from private as well as government sources, it having been contemplated to give full play to private initiative and enterprise and to have the government undertake only those projects which by their very nature are not susceptible of private undertaking or which are necessary but are not attended to by private interests.

During 1949 when the economic program was already in effect substantial accomplishements were realized both in private as well as in the government sector, as discussed in one of the preceding chapters. Projects had been established and completed while some of them are still in the process of execution. They have been duly taken into account in the revision of the program.

In bringing up to date the economic development program, the different industries contemplated and which still remain for execution were reexamined to determine priorities as required by present conditions and consistent with present resources. In this work certain criteria necessarily have to be followed. The basic industries on which the whole economic development of the country depends should naturally be undertaken as rapidly as possible, consistent with available facilities and resources. No industry can be established without power, machinery, tools, and chemicals; no progress in agriculture is possible without fertilizers; and production could not be fully effective in lifting the economic standards of the nation without adequate means of transportation.

On the other hand, consumption goods industries are very necessary too in order to meet essential requirements. Doubtless, much capital needed for the purchase of machinery and equipment will be spent in foreign countries and will take up a sizable part of the foreign exchange resources; this will have to be gradually made up by reduced imports of consumption goods.

In the choice of industries given high priority, the following criteria are of importance:

1) Industries that will have substantial impact on foreign trade either by dollar saving or dollar earning should be undertaken at once.

2) Industries that can be established and brought into production sooner should have preferential position.

3) Industries that will stimulate other industries should be given high priority.

4) Industries that have lower capital to net product ratio should be undertaken earlier.

5) Industries where the ratio of local to imported raw material is higher should be preferred.

6) Industries where domestic requirements can be provided within an economic operating capacity for such industry should be given priority.

The industries considered are all technically and economically justified. In the consideration of the economic justification the price at which the product can be marketed locally compared with imported articles is, of course, an important consideration, but the fact that a local industry satisfying otherwise the important criteria mentioned above cannot lower the price of its product below the foreign equivalent especially during initial years of operation, is not to be held against it. and that industry still can be established for the purpose of boosting the national production. A slight increase in the price can be borne by the purchasing public, if in so doing the natural resources are developed and the industry is made available as a productive enterprise within the country.

The attached table summarizes the industrial program as originally set up, the portion that had been accomplished in 1949, and the revised program for the remaining period 1950-1953. The schedule of allotments every year of foreign exchange and local currency, as well as the expected yearly increments of production are also shown. The industries proposed to be undertaken in accordance with the program are as follows:

	CAPITAL INVESTMENT (PESOS)	FOREIGN EXCHANGE (PESOS)	ANNUAL PRODUCTION (PESOS)
Textiles			
Textile mills	1,760,000	550,000	4,000,000
Ramie plant	5,600,000	4,400,000	15,000,000
Jute spinning	3,000,000	1,870,000	12,000,000
Rayon plant	18,000,000	6,000,000	18,000,000
	28.36		49
Power and Fuels			
Hydroelectric plants	106,000,000	58,700,000	13,650,000
Oil refinery	24,000,000	17,000,000	1,800,000
Alcoholic refinery	3,000,000	2,400,000	900,000
Coal mining	1,500,000	1,200,000	3,000,000
	134.5		19.35
Iron and Steel			
Steel rolling mill	4,460,000	3,400,000	5,400,000
Shipyard & drydocks	13,000,000	3,500,000	9,500,000
	17.46		14.9
Paper and manufactures			
Pulp mill	1,200,000	500,000	1,000,000
Machinery			
Agricultural implements	900,000	200,000	1,000,000
Aluminum plant	4,000,000	3,250,000	3,000,000
	4.9		4
Chemicals			
Ammonium sulphate	11,000,000	8,000,000	8,000,000
Superphosphate	2,630,000	760,000	3,500,000
Agricultural lime	1,800,000	1,440,000	800,000
Caustic sodachlorine	1,500,000	900,000	800,000
Other chemicals	1,000,000[a]	800,000	1,600,000
	17.9		14.7
Other Industries			
Cigarette factories Fish canning plants Glass products plant Clay products plant Miscellaneous, etc.	8,000,000[a]	5,000,000	10,000,000
Total	**212,350,000**	**119,370,000**	**112,950,000**

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[a] For assistance only to private enterprise.

It will be noted that the total capital investment proposed is ₱212,350,000 but the annual production is ₱112,950,000 or a capital investment to annual production ratio of 1.75. All the industries herein proposed can be built within the period of five years included in the program. Hereunder is the brief description of what is contemplated to be done under the proposed projects. The economic analysis and justification of these projects appear in annexes to this report.

Textile Mill — During the past years, the country's largest importation was in textiles almost equally divided between cotton and rayon and their manufactures which amounted to more than ₱250 million. It is believed that the country's natural imports of textiles (exclusive of stockpiling) is less than this figure. It is proposed to control the importation to the real requirements at the same time that local production is increased by the present textile mill of the National Development Company, together with the ramie and rayon project now contemplated by private parties. With the amount now proposed, it is intended to carry on the Narvacan textile mill with a capactiy of 17,000 spindles to provide the yarn requirements for home weaving in the Ilocos provinces, thereby also promoting home industries at the same time that the textile output is increased to 25,000,000 square yards annually which is only about 14% of the indicated imports of these goods.

Ramie Plant—It is proposed to establish a ramie plant with an annual capacity of 3,000 tons of ramie fibers to process 2,160 pounds of refined fiber per day, spin 6,160 pounds of yarns, and weave and finish 15,700 square yards of cloth. This plant will absorb a major portion of the ramie production planned in Mindanao leaving a small margin of exportable surplus to neighboring countries.

Jute Spinning — This project contemplates a 920 spindle spinning unit with a capacity of 7.9 million square yards of burlap or 3,570,000 standard bags. This plant can produce only about 20% of the Philippine burlap requirements.

Rayon Plant — There is now a plan by private industrialists to set up a rayon plant utilizing cellulose from the sugarcane baggase. Such a project should be encouraged to the fullest extent in order to solve the present shortage of raw cotton and other fibers within the country.

Power and Fuels — Imports of petroleum products amounted to about ₱36,000,000 in 1947, ₱68,000,000 in 1948, and ₱69,270,000 in 1949. In this item of imports, controls cannot be largely relied upon to effect a reduction without paralyzing some of the activities dependent on fuel. On the other hand, as long as commercial deposits of petroleum are not uncovered in the Philippines, importation of this product is inescapable. As a matter of fact, the industrialization and agricultural improvement programs will have the effect of further increasing the use of fuel. It is, therefore, necessary that other means of replacing and reducing these imports be considered. The experience of other countries has shown that the establishment of petroleum refineries, permitting the importation of crude at much lower cost than the finished product and processing the crude locally, cut the dollar outlay as much as 70 percent. This situation points to the necessity of very serious consideration to be given to establishing a petroleum refinery in the Philippines. Corollary to this would be the establishment of alcohol plants processing molasses and distilling wood products to replace gasoline in certain operations and to mix with gasoline for ordinary transportation uses. The water power development program which will partly displace existing fuel-burning plants will also reduce fuel importation gradually. Development of coal mines assuring certain increasing supply of coal at reasonable price will provide conversion of thermal power units to coal burning.

Hydroelectric Power—In this program is included only the Ambuklao project with a capacity of 75,000 KW and its transmission lines, the Maria Cristina Falls project with a capacity of 25,000 KW, and a number of small projects in different parts of the country with an aggregate capacity of 8,000 KW. The Maria Cristina Falls project is now being undertaken with a capacity of 25,000 KW to supply power to the initial 50,000 metric tons ammonium sulfate plant. The Ambuklao project will replace fuel generated power in the Central Luzon-Manila-Baguio area, save dollars in this respect, provide for the urgent power requirements in this area and stimulate miscellaneous industrial growth. The hydro power plants in other areas will also replace the fuel generated power, eliminate inefficient and high cost power units and at the same time stimulate productive effort in those areas.

Oil Refinery — It is proposed to establish initially, either by the government or in cooperation with fuel companies, a petroleum refinery with a capacity of 10,000 barrels of crude per day, initially to process imported crude. Philippine imports of liquid fuels before the war averaged the equivalent of slightly less than 10,000 barrels of crude per day. Postwar imports of such fuels averaged the equivalent of more than 25,000 barrels of crude per day. The establishment of such a refinery will reduce the dollar outlays for the import of liquid fuels and at the same time bring down the cost of petroleum products in the Philippines.

Alcohol Refinery — With the capital investment proposed in this program it is contemplated to rehabilitate existing alcohol plants and erect additional rectified alcohol distilleries that will be capable of producing 90 million liters of alcohol a year. This quantity of alcohol is needed to add a 15% blend to 1948 gasoline consumption thus reducing gasoline requirements and utilizing the country's natural resources.

Coal Mining — It is proposed to develop the Malangas Coal Mines to the point where it can supply an annual output of 180,000 metric tons a year. This coal is necessary to replace imports of coal, displace the liquid fuel in some thermal plants and provide coke for the metallurgical industries. In 1940 importation of coal was 362,000 tons. The importation of this material since the war has been reduced, but at least a return to the prewar consumption will be necessary to reduce liquid fuel imports and provide for the various uses as already discussed.

Steel Rolling Mill — Iron and steel products imports took up about ₱46,000,000 in 1948 and ₱75,539,946 in 1949. According to statistics the average importation from 1935 to 1938 for the categories of steel products most in demand was about 63,000 metric tons and for the year 1947 to 1948 the average was about 85,000 metric tons. To meet the local requirements inducing a major portion of steel importation, it is desirable to establish a steel mill in the Philippines to supply the local requirements of the major steel products and use initially local supplies of scrap iron and scrap steel. It is planned to set up a steel rolling mill with a total output of 60,000 tons. The establishment of such a small capacity mill is made possible by the cheap power available in the Maria Cristina area. This plant will make ingots and steel bars into structural shapes and sheets to be used by the shipyards, machine shops, construction projects, etc. and also make possible the eventual establishment by private industrialists of small factories for products derivatives from semi-finished materials put out by the steel mills.

Shipyards and Dry Docks — The shipyard and dry dock already authorized and now under construction will be carried out to completion for the purpose of providing local adequate facilities for shipbuilding and ship repair. Incidentally, this plant can also undertake during emergencies fabrication and replacement of heavy equipment and machine parts needed by industrial establishments.

Pulp and Paper — Paper and manufactures took 45 million pesos in 1948 and 48 million pesos in 1949. Of these amounts about 35% are newsprint, wrapping, and simple and low grade book and writing paper which can be produced in the Philippines out of local raw materials. Necessarily, the industry will have to be encouraged and even assisted in the beginning in order to make possible the production of as much of the paper requirements locally as possible. The existing paper mill has a capacity of 5,000 tons utilizing imported pulp. The immediate need is to establish a pulp mill to replace some of the imported raw material of the existing mill.

Agricultural Implements — Machinery of all kinds were imported in the Philippines in the amount of 78 million pesos in 1948 and 65 million in 1949. Doubtless the country cannot hope to produce economically the complicated machineries that it needs but plants for the manufacture of simple tools and machineries utilizing a large part of local raw materials such as the steel from the proposed steel mill can be established. The proposed agricultural implement factory will produce 8,850 units of plows, harrows, shovels, picks, garden tools, etc. Such equipment are essential in Philippine agriculture in view of the small size of farms and the existing practice in the rural communities of utilizing carabao-drawn equipment in the cultivation of the fields. This plant will also go into fabrication of simple machinery and equipment such as pumps, mechanical devices of use and in demand locally.

Aluminum Plant — For several years now studies had been made by foreign aluminum companies for the establishment of an aluminum rolling mill and fabricating plant to supply local demand for such products and at the same time provide for export to neighboring countries. This proposal should be given full encouragement but the responsibility therefore should be borne as much as possible by the private concerns.

Ammonium Sulfate Plant — The construction of a 50,000-ton ammonium sulfate plant is now about to begin and is due to be completed within two years. The prewar annual use of this material was over 50,000 tons and at one time exceeded 64,000 tons. In view of the further depletion of the soil since and the need for fertilization to improve yields and reduce unit production cost larger supplies for fertilizers will be needed.

Superphosphate Plant — There is at present a plan for a private company to set up a superphosphate plant with a capacity of about 50,000 tons annually. The production of this quantity of phosphatic fertilizer is necessary in order to supplement the ammonium sulfate fertilizer and thereby provide a balanced fertilizer supply in the country. Certain soils and crops need phosphates in addition to nitrogen for adequate plant growth.

Agricultural Lime — The large scale manufacture of agricultural lime to process available local lime deposits up to an aggregate capacity of 160,000 tons is contemplated under this program. Lime is necessary to treat Philippine acidic soils in order to improve yields. Experiments and actual field observations have shown excellent results of lime application in the rice fields.

Caustic Soda-Chlorine — A 1,750-ton plant is now proposed to supply the caustic soda chlorine requirements of the country. This is still short of actual demand, but provides a modest start.

Other Chemicals — It is anticipated that other chemical industries of small capacities will be established to supply demands for such products, under the stimulus of the import and exchange controls. The sum of 1,000,000 pesos is therefore alloted in this program for this purpose.

Other Industries — Included in the industrial program is a sum of ₱8 million for miscellaneous industries and handicrafts. This will be used for assistance to private enterprise in the establishment of such industries. It will also be partly used in the establishment of home industries based primarily on labor power, adjusted to the peculiar conditions of each locality. In this way, continuous employment may be provided for seasonally unemployed labor in agricultural sections using a wide variety of raw materials that can be easily produced locally.

The low level of productivity of the mass of the urban population could be raised by the promotion of these home industries and the parcelling out of labor-intensive job units. At the same time the low area-and-man productivity of the rice and other specialized farmer-operators could be supplemented and thus enhanced by off-season employments that would be afforded by the miscellaneous industries which are contemplated under this program.

Supervision and Coordination — As in the case of the agricultural program, there is need of an agency which will supervise and coordinate the prosecution of the various projects included in the industrial program. Some of those projects will entail considerable planning and organization The agency should watch closely the progress not only of projects being undertaken by government agencies, but those of private enterprises as well, to see that the goals envisioned are achieved.

To prevent economic waste or ruinous competition, the agency should be given power to decide which industry should be encouraged in this country or when there are already sufficient plants producing a given commodity. In some countries of Latin America, the establishment of industries is licensed by a government agency. Similar practice may be adopted in this country.

The agency suggested herein should undertake a continuing study of the varied phases of the industrial program to see that it meets the changing local and foreign economic conditions.

In order that the agency may properly discharge its responsibilities, it should not only be provided with technical men but it should also be able to count on the assistance of the National Research Council, UTOP, and of such men as could be obtained under the Point Four Program of President Truman.

The Commission believes that the Department of Economic Coordination is hardly in a position adequately to discharge the responsibilities of an agency such as the one herein suggested. To avoid the usual handicaps of bureaucratic details and red tape, it may be well to set up an organization under the National Economic Council for the specific purpose of performing these functions.

As at present constituted, the Department of Economic Coordination will be largely performing the functions of supervising the operation of the various government instrumentalities which have been placed under its jurisdiction. With adequate management (board of directors and managers) it would seem hardly necessary for a department on the Cabinet level to supervise the operation of such instrumentalities.

D. Manpower Training

1. Introduction

The agricultural and industrial development program calls for the harnessing not only of the material resources of the country in natural wealth and capital goods but also of its human resources. To raise the level of production, natural resources and capital should be put to productive pursuits by a well trained labor force and directed by a highly developed technical group who can assume the leadership and direction of enterprises. An adequate training program through our educational system is, therefore, an integral part of the entire economic program.

The educational system obviously must be so organized as to meet the requirements of the development program. Its facilities in staff and equipment and its curricula must be so recast as to make them better able to meet the demands of old and new industries to be developed under the plan.

2. A Brief Survey and Educational Facilities

a. School age population and enrollment.

It is reported that the total school-age population (1949) was 6,201,400. Of those in the elementary age groups (7-10 years and 11-12 years) 84.1% were in school; and of those in the secondary school age group (13-19 years), only 43%.

b. The total school enrollment was 3,871,971 of which 88.2% were in the elementary grades; 9.6% in secondary schools; and 2.2% in Colleges and Universities.

c. Enrollment in public and private institutions.

On the elementary level, of the total enrolled, over 97% were in public schools and less than 3%, in private institutions. Comparative enrollment in secondary schools showed that public and private schools shared about equally, the figures being 50.3% and 49.7%, respectively.

In institutions of higher learning, we find that private institutions had 92.3% of the total enrollment; the University of the Philippines, 4.7%, and other public colleges 3.0%.

d. Percentage of survival in public schools:

The degree of effectiveness of the country's educational facilities and the extent to which such facilities have been used may be gleaned from data on survival of students in their progress from the primary grades to the colleges.

It had been found that —

(1) Out of every 100 students starting in Grade 1
45 reached grade IV
14 reached grade VII
6 reached first year H. S.
3 reached the fourth year and perhaps graduated

(2) Percentage of High School Graduates going to College.

Percentage of secondary school graduates going to the University of the Philippines	9.77%
Percentage going to private colleges and Universities	20.05%
Total of public secondary school graduates going to College	29.82%

Therefore, roughly 1 out of every 3 high school graduates went to college.

(3) Based on the percentage of survival in the University of the Philippines, from 200 starting in grade 1, one reaches or graduates from a college or university.

3. Vocational Education: Summary and Proposals

Vocational education below the collegiate level covers four major areas, namely, agricultural education, trade and industrial education, business and distributive education, and homemaking education. These different training programs in vocational education are carried out in the fifty-five (55) vocational schools under public support. These schools are distributed as follows: agricultural schools, 26; trade technical schools, 28; and business school, 1. These schools have an enrollment of 28,068 students in the school year 1949-1950, which is 13.78 percent of the total secondary-school enrollment.[1] The enrollment in the vocational schools under public support is distributed as follows: agricultural education, 10,586 students, or 37.6 percent; trade and industrial, 17,123 students, or 61.0 percent; and business education, 359 students, or 1.4 percent.

For the operation and maintenance of the vocational schools, the amount of ₱2,159,068.00 was appropriated during the fiscal year 1949-1950. This amount is around 1.6 percent of the total appropriation of ₱139,592,208.00[2] for the public schools. In other words, for every peso appropriated for the public schools, a little over one and one-half centavos (₱0.016) are appropriated for the support of the vocational schools. For every peso appropriated by the National Government for vocational education, about 75 centavos is spent for agricultural education; 21 centavos for trade and industrial education; and four centavos (₱0.04) for business and distributive education.[3] Computed on a per-student basis about ₱223.12 goes to the support of business and distributive education (Philippine School of Commerce), ₱153.26 goes to agricultural education, and only ₱26.66 to trade and industrial education.

With the present low purchasing power of the peso, the average per-student national vocational aid and appropriation, especially for trade and industrial education, is indeed very low. Because of this acute financial difficulty, some of the vocational schools have to charge tuition fees as high as ₱75.00. Such a policy is at variance, and no doubt, runs counter with the intents and purposes of vocational training as provided for in the Constitution and the original provisions of the Vocational Education Act of 1927.

Under the present financial state, the vocational schools particularly the trade schools, have hardly acquired 10 percent of their prewar equipment. A few of the trade schools, however, have acquired some equipment equal in number to those of their prewar set-up from the reparations equipment from Japan, but most of these pieces of machinery are not in good running condition and are unfit for instructional purposes. To put these machines in good running condition would entail a big outlay which may be wisely invested in modern equipment.

The finances and instructional facilities, such as equipment, hand tools, and other teaching aids and devices available in the vocational schools are hardly enough to meet the essential needs of even the 28,068 students presently enrolled in these schools. Of this number, approximately 15 to 20 percent may be graduated each year. Unless the present instructional facilities are improved, the vocational schools cannot be expected to turn out graduates that are capable of meeting occupational standards.

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[1] Total enrollment was placed at 203,569 students in the public schools. Data furnished by the Research and Measurement Division of the Bureau of Public Schools.

[2] Figure furnished by the School Finance Division of the Bureau of Public Schools.

[3] There is only one school of commerce compared to 26 agricultural schools and 28 trade schools.

With the expanded facilities recommended herein, it is expected that about 60,000 students could be given training each year, and the vocational schools alone could very well graduate no less than 10,000 trained workers every year.

To carry out the program of vocational education embodied in this report, the following proposals and recommendations are hereby presented:

a. A national advisory board on vocational education to advise the Secretary of Education on policies germane to the selection, training, placement, and progress of workers needed in agriculture, trades and industries, and business should be created. The board shall be composed of one representative each from the Department of Agriculture and Natural Resources, Department of Labor, and Department of Commerce and Industry to be recommended by the Department Secretary concerned, and three private citizens eminent in industry, agriculture, and business to be appointed by the President.

b. The vocational Education Act of 1927 should be amended to convert the present Division of Vocational Education in the Bureau of Public Schools into an **Office of Vocational Education** to be placed directly under the Department of Education. An initial outlay of ₱147,420.00 will be needed to effect this proposal in addition to ₱62,580.00 of the salaries and wages of personnel who will be transferred to this new office. With this proposal, it is also recommended that the administration and supervision of the vocational schools, public and private, be transferred to this new office.

c. The proposed five-year expansion program for vocational education will require an average yearly financial outlay of ₱10,094,011.12, including the requirements of the training programs in vocational education as demanded by accepted standards. The estimated cost of the five-year program would involve an aggregate cost of approximately ₱170.00 per student per year. This has been estimated on the basis of an expected yearly enrollment of 60,000 students. The recommended average yearly financial outlay includes the yearly conversion of two (2) existing vocational schools, one of the Central Luzon Agricultural School type, and another of the type of the Philippine School of Arts and Trades, or a total of ten (10) schools in five years; and the establishment and operation and maintenance of one school each year during the five-year period of the Central Luzon Agricultural School, the Philippine School of Arts and Trades, and the Philippine School of Commerce in strategic places, or three schools each year.

If a general revision of the educational policy of the nation as indicated in a separate report of this Commission is undertaken, it should be possible to finance the vocational training program herein proposed within the appropriation now provided for public education.

d. The training program in the different areas of vocational education should be geared to the economic development program so that the trained workers can take part in it actively. To fully implement this proposal, it is recommended that wherever it is feasible and in places where vocational schools do not exist, the existing general high schools be gradually converted into vocational schools which should be fully supported by the national government.

e. The training programs should be developed and organized in accordance with the prevailing needs and occupational standards so as to make the training functional. This would require greater autonomy and flexibility on the part of the local school administrators in operating the training programs. In this connection, it is recommended that auditing and accounting rules and regulations, which become the bottleneck in the progress of the vocational training programs, should be reduced to the minimum.

f. To step up to training of manpower needs for the envisaged economic development program, vertically and horizontally, more intensive short-unit courses should be organized and offered in the vocational schools both for in-and out-of-school youth and adults on a day-and-evening-class basis to meet certain entrance requirements in areas where the projected industrial plants are to be established. These short-unit courses should be carried on the basis of cooperative training program, that is, part of the training will be done in the school and part in the industrial plant.

g. The success of the training program in vocational education is conditioned by the occupational competency and professional background of the vocational teachers. In this connection and in order to raise the standard of instruction in the present vocational schools, it is strongly recommended that the training of needed teachers and the up-grading of the non-professionally-trained teachers now in the service be given immediate attention.[4] For this purpose, the amount of ₱500,000.00, authorized under Republic Act No. 415 should be released immediately.

h. To implement and to carry out fully the intents and purposes of Republic Act No. 415, regarding the training of trade and industrial teachers, the proposed enabling legislation for the Philippine School of Arts and Trades be presented as one of the Administration must measures.

i. The advanced training for teachers and technicians and obtaining technical assistance from foreign countries should be made part of the program for vocational education. The following trainees or fellows should be sent abroad each year for the next five years in the fields of study indicated:—(a) five for advanced teacher-training, (b) six for the technical phases of agricultural education, (c) fifteen for trade technical education, (d) two for business and distributive education, and (e) two for homemaking and vocational trades for girls, or a total of thirty trainees. It is estimated that the Philippine Government will need to set aside ₱60,000.00 annually to meet the expenses of these trainees; dollar expenditures are estimated at $105,000.00 necessary to cover the difference of the expenses of the trainees while in training abroad.

As to technical assistance from foreign countries, at least four (4) experts should be invited to assist in the organization and administration of the various teacher-training programs for at least the initial year of the five-year period. For these experts, it is estimated that the Philippine Government will need to set aside ₱38,120.00 to cover per diems, travelling expenses, and other allowances while in tour of duty in the Philippines.

In view of the fact that the success of the economic development of the Philippines depends to a large degree upon the effectiveness and extent of the vocational education program, it is strongly urged that recommendation No. 3 above be given immediate consideration.

4. General Education: Summary and Proposals

For the carrying out of a scheme of general secondary education fully appreciative of the problems of economic development, the following proposals are hereby presented:

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[4] Schools now ready for teacher-training work are: Philippine School of Arts and Trades (Manila); Bukidnon National Agricultural School (Bukidnon); Central Luzon Agricultural School (Muñoz, Nueva Ecija); Baybay National Agricultural School (Leyte); Iloilo School of Arts and Trades (Iloilo City); Cebu School of Arts and Trades (Cebu City); and Philippine School of Commerce (Manila).

a. In order to provide adequate secondary education for all types of capacities and meet the needs of all youth of high school age, there should be developed gradually out of the present general high schools, secondary schools of the type of a comprehensive high school.[5] This type of secondary school would be more responsive in meeting the needs of the youth preparing to enter college and those who can not continue for lack of means or otherwise but may desire to enter the occupations.

b. The type of high school recommended herein shall continue to be a tuition-fee school. In order, however, that the public secondary schools will not lose their identity as such, part of their operating expenses should be borne by the local government, particularly those which relate to the operation and maintenance of the practical arts courses. The local government aid to the high school should be determined on a per-student basis. That is, ₱40.00 per student in the first-two years (junior high level) and ₱50.00 per student in the last two years (senior high level) for those preparing to enter the occupation should be made available to the local high school authorities. Students preparing for college should not be entitled to any government financial aid. All financial aid given to secondary education should be spent exclusively for the purchase of equipment and supplies needed for the practical arts and vocational courses. On the basis of the total enrollment of 171,295 in the general high schools in 1948-1949, the local governments would spend approximately ₱5,781,105.00, granting that 25 percent of the total number of students are definitely going to college. This amount includes aid for girls taking homemaking.

This proposal would provide the students the desired work experiences enunciated for the general high schools as these schools would be provided with adequate tools, equipment, and sufficient workshop space for all the practical arts courses offered.

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[5] This type of secondary school is four years in length. The first two years (junior high level) must be devoted to citizenship training of the basic core subjects and intensive practical arts courses for *the development of the right work attitude and habits and understanding*. This must be the common curriculum which should be required of all youth entering high school regardless of social and economic status, aptitudes and stations in life. This requirement (as provided for in the Consitution) must be enforced in both the public and private secondary schools. The last two years (senior high level), with the aid of an adequate guidance program, may be devoted either for the preparation for entrance in college or for successful entrance into the occupations. In places where there are special vocational schools, the preparation for entrance into an occupation must be done in these schools. However, in places where such facilities are not available, efforts must be made to provide such training for entrance into the occupations.

c. In view of the difficult socio-economic conditions now obtaining in this country, the in- and-out-of-school youth and adults who are in strait may be the cause of future social problems of serious proportions. For this matter, there is an immediate need of creating a National Youth Administration Office, to be placed directly under the Office of the President, which should look into the problems and welfare of youths with a view to recommending and adopting ways and means as well as measures calculated to improve the youth socially and economically through training. A certain portion of the President's social amelioration fund may be spent for this purpose.

d. The shortage of professionally-trained practical arts teachers is one of the most serious problems of the general secondary education. To solve this problem, the national vocational schools authorized to train such needed teachers must be provided with adequate funds to carry out the provisions of Republic Act No. 415.[6] This Act was approved by His Excellency, the President, during the early part of 1949, but it has never been in operation since the Secretary of Finance has not as yet certified to the availability of funds as provided for in the said Act.

e. The administrators of general education should make a vigorous campaign to change the attitude of the youth as well as the adults toward work and economic consciousness. The rule of productive workers in nation-building should be recognized and dignified. The press can likewise help along this line.

5. Guidance: Summary and Proposals

In view of the complexity of our changing socio-economic society, guidance becomes a necessary service in our total educational program. It should be integrated in and, if possible, precede any educational training program, especially in the field of vocational education.

The primary purpose of guidance is to help an individual make a wise choice of his life career consistent with his capacities, interests, and aptitudes; training opportunities; placement possibilities; and the needs of present-day industrial society. Unless there is an effective guidance program in each of our schools, there will always be a waste of human effort in training both on the part of the teachers and the students.

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[6] An Act appropriating the sum of five hundred thousand pesos for the operation and maintenance of the teacher training departments of the existing national schools of arts and trades and the creation of teacher training departments in the Central Luzon Agricultural School, Baybay National Agricultural School, Bukidnon National Agricultural School, and the Philippine School of Commerce, for the training of teachers of industrial arts, trades, agriculture, and business, respectively, for both the elementary and the secondary schools.

In view of the above and so as to carry out the objectives of guidance, the following proposals are hereby made:

a. The guidance and counselling program of schools should be staffed with highly competent personnel. For this purpose, it shall be necessary to revive and strengthen the Section of Guidance and Placement in the Vocational Education Division.

b. All teacher-training curricula and courses, public and private, should make provisions for the inclusion of professional courses in guidance and counselling and vocational education to give teacher-trainees proper understanding and orientation in guidance and vocational education and to develop in them better work attitudes and habits. In this connection, it is recommended that 12 standard college units be the minimum requirements for these professional courses for students taking any of the teacher-training curricula.

c. The guidance and counselling program of the general secondary and vocational schools already established and those to be established must be strengthened under the leadership of local school administrators as a starting point and with the cooperation and understanding of the entire school staff of the program of guidance.

d. To implement the guidance services now being rendered in the vocational schools, a vocational counselor should be provided for each of the eight (8) national vocational schools who will act as head of the committee of teachers on guidance, and four (4) regional vocational counselors for the other vocational schools. With a salary item of ₱2,400.00 per annum for each counselor, the sum of ₱28,800.00 will be needed for this purpose. The general secondary schools may be urged to have also a vocational counselor in each school and provide funds therefor in their respective budgets.

6. The Place of Higher Education

What is the place of higher education in our agricultural and industrial development program?

What is the extent and quality of our existing facilities?

What measures must be adopted to gear higher education to the manpower needs of our agricultural and industrial development?

Our educational facilities for training would fall short of the requircments of the new industries if we fail to maintain technical and scientific institutions of higher learning best qualified for training in the fundamental sciences, technology, and the professions so that we may have highly trained men to organize and direct industry and thus make permanent the gains that may accrue to the whole economy.

Higher education has for its fundamental objective the preparation for mastery and leadership in the arts, the sciences and the professions. It aims, furthermore, to provide a broad culture so that men may be better able to adjust himself to his ever changing environment; to modify or alter the same if necessary; to give man a greater understanding of the problems of society; and what is more, to enable him to lead a happier and fuller life.

We should not, therefore, be content with providing vocational training facilities in our secondary schools in the field of agriculture and the manual arts. To be sure we need to train our manpower resources for the immediate labor requirements of new industries as well as of agriculture. But we should in addition provide for an adequate system of higher education so that we may have a permanent supply of technical and scientific men. Only then can our people be masters of the new economic structure that we are helping erect under this program. Otherwise, in the onward march of science and technology we will fail miserably in competition with other countries of the world.

It is, therefore, proposed to briefly present and assess present facilities for higher education; the extent to which such facilities has been utilized; the quality of such facilities; its adequacy or inadequacy; the role of the State University and the problems ahead.

a. Present status; extent of facilities.

In number of institutions there were a total of 294 private colleges and 15 state colleges or a grand total of 309 institutions distributed all over the country. Of the private institutions, 216 were junior colleges; and 66, 4-year colleges; and 12 universities. Of the state colleges, 14 were junior colleges and 1, a university.

Manila occupies a dominant position in higher educational facilities with 70 private institutions of which 36 were junior colleges; 25, senior colleges; and 9 universities. State institutions number 4 consisting of the University of the Philippines and three other institutions of collegiate rank, namely the Philippine Normal School, the Philippine School of Arts and Trades and the Philippine School of Commerce.

In number of colleges, the Philippines have proportionately as many as leading educational centers in the U. S.

b. Enrollment

It has been found that enrollment is heavily concentrated in a few universities. Two of such institutions had more than 10,000 students each; and 12 with between 1,000 to 4,000.

Collegiate enrollment was nearly 84,000 or 2.2% of total school enrollment. Of the total, only about 5% represented enrollment in the University of the Philippines and 92%, in private institutions.

c. **Courses**

There was a wide variety of courses offered representing all known professions.

Education was offered in	169	institutions
Business Administration	141	"
Liberal Arts	304	"
Civil Engineering	20	"
Mechanical Engineering	6	"
Medicine	2	"
Mining Engineering	3	"
Aeronautical Engineering	7	"
Chemical Engineering	7	"
Industrial Chemistry	8	"
Electrical Engineering	7	"

Enrollment in the different courses in private institutions may help show the preferences of students for the various fields offered:

Junior Normal	19.82%	of total enrollment
Education	18.33%	
Liberal Arts	17.45%	
Commerce	16.07%	
Engineering	9.32%	

Least preferred were Arts and Sciences, Home Economics, Chemistry, Ministry, Agriculture, Fine Arts, Optometry and Surveying.

Professional preparation in the Philippines may be indicated by the number of professionals both reported in the 1933 Census and registered in government Board of Examiners as of December, 1947. In the order of numbers, it showed that teaching, law, medicine, nursing, pharmacy and dentistry were the preferences.

d. **Quality of facilities offered**

It is a sad commentary that higher educational facilities in the Philippines are for the most part more form than substance. If these institutions are to serve as training ground for technical leadership to meet the requirements of our agricultural and industrial development program, revolutionary changes of the entire pattern of higher education are indeed necessary. A fair appraisal of our higher institutions of learning will reveal that on the whole, and with a few notable exceptions, and despite supervision by the Department of Education, their usefulness is seriously impaired by such fundamental defects as poorly trained faculty, the main dependence on part-time teaching staff, poor equipment and facilities, unduly large classes, indiscriminate admission of students, lax scholarship rules and the overpowering considerations of profit. The University of the Philippines is an exception to the rule but the field served by it is necessarily limited; its enrollment represented in 1947 only less than 5% of the total enrollment in colleges and univeristies. It cannot obviously expand indefinitely, limited as its finances are by public support, and motivated as it has always been by the desire to set academic standards in the country. During its life of forty years it has zealosly kept faith with the trust reposed on it to educate the youth and train leaders. About 60% of the leadership of the nation are graduates of the University. Nevertheless, despite its zeal in maintaining standards in its various technical and professional departments, there is much left to be desired.

It is highly necessary for the University to continue its leadership in higher education; and for it to serve as the center of an expanded training program for highly trained technical men that will be needed in the various phases of the economic program, it must have greater financial support to enlarge the facilities of its technical departments in equipment and in personnel. Only through a keen appreciation of the role of state supported institutions of higher learning in the economic development program now going forward and of their potentialities for greater service that their clamor for greater support may be fully understood.

e. Reform

There is not much that can be said about possible lines of reform of the pattern of higher education in this country so that it might become more responsive to the demands of our economic program. It is patent that we have to recast the entire fabric of higher education, raise its ideal from profit to greater service to the country and the consequent improvement in facilities, in equipment and personnel will necessarily follow. Already some of our institutions of learning have in part succeeded in harmonizing profit and service to the country that high standards have been maintained and these may well serve as a pattern for the other institutions to follow. Public regulation alone cannot accomplish the change, the remedy may even have to go deeper in the reshaping of the attitudes of the youth toward dignity of work, and his general social and educational outlook.

It is estimated that to improve facilities for research and higher technical education in the University of the Philippines, so as to enable it to play its proper role in the development program, the following outlay would be needed over the five-year period 1950-1954:

1. Outlay for students to be sent abroad for specialized training, approximately 10 yearly	₱ 500,000
2. Outlay for teachers and scientists from abroad, salary and travel, approximately 10 yearly	1,000,000
3. Housing for visiting professors, including furnisings, approximately 10 units	200,000
4. Equipment, scientific and technical	1,250,000
5. Laboratory supplies	750,000
6. Labor and assistance	500,000
Total	₱4,200,000

The Commission believes that negotiations might be initiated in order that this requirement may be financed by the program for technical assistance to under-developed areas sponsored by the United States Government and by the United Nations.

FINANCING THE PROGRAM

1. Cost of the Revised Development Program

The capital requirements of the projects listed in the revised development program are estimated at about ₱975.9 million for the period 1950-1954. Of this total, ₱420.1 million are foreign exchange requirements and ₱555.8 million represent local currency expenditures. The estimate comprises both private and Government investments. Their distribution over the various sectors of the economy and over the program years is shown in the following tables:

Estimated Cost of Revised Development Program
(Million Pesos)

	Total Cost	Foreign Exchange	Local Currency
Agriculture	554.3	180.5	373.8
Industry	212.4	119.4	93.0
Mining	22.0	11.0	11.0
Transportation and Communications	114.2	91.4	22.8
Public Works	73.0	17.8	55.2
	975.9	420.1	555.8

Yearly Distribution
(Million Pesos)

	Total Cost	Foreign Exchange	Local Currency
1950	234.6	110.6	124
1951	262.0	127	135
1952	211.3	94.3	117
1953	167.1	60.3	106.8
1954 (Agriculture Only)	100.9	27.9	73
	975.9	420.1	555.8

It is estimated that to carry out the changes in the system of vocational education advocated by the program an average annual appropriation of a little more than ₱10 million would be needed. The Commission recommends that this be provided out of regular budget appropriations.

The requirements for research and higher technical education in the University of the Philippines has been estimated at ₱4,200.000 up to 1954. The Commission recommends, as stated before, that this be made the subject of negotiation so that it may be included under the program for technical assistance to under-developed areas.

II. Sources of Peso Funds

The following are the actual and potential sources of peso funds for the development program:

Savings and time deposits with Commercial Banks
Savings deposits with the Postal Savings Bank
Premium Income of Life Insurance Companies
Premium Income of the Government Service Insurance System
The Rehabilitation Finance Corporation — out of its own funds
Capital newly paid into corporations, partnerships, and Cooperatives
Profits of foreign corporations
Taxes
Private hoards
Foreign Capital
The Central Bank

It appears from a survey of what these sources might yield that the peso funds required by the program are within the capacity of the economy to provide.

1. The available records of savings and time deposits with commercial banks exhibit an annual rate of growth of about 10% or ₱28 million.

Savings and Time Deposits — Commercial Banks

	AMOUNT (MILLION PESOS)	ANNUAL RATE OF GROWTH (PERCENT)
December 31, 1945	94	—
December 31, 1946	178	89
December 31, 1947	233	31
December 31, 1948	249	7
December 31, 1949	284	14

2. The average annual increase in savings deposits with the Postal Savings Bank is estimated at ₱5 million.

Savings Deposits — Postal Savings Bank

	AMOUNT (MILLION PESOS)	ANNUAL RATE OF GROWTH (PERCENT)
December 31, 1946	7.6	—
December 31, 1947	19.3	154
December 31, 1948	25.2	31
December 31, 1949	30.6	21

3. The annual average premium income of life insurance companies is estimated at ₱20 million.

Premium Income of Life Insurance Companies
(Excluding annuity consideration)
(Million pesos)

1946	13.4
1947	18.0
1948	22.5

4. The annual average premium income of the Government Service Insurance System is estimated at ₱10 million, on the basis of the following experience:

Premium Income of the Government Service Insurance System

PREMIUM INCOME	Compulsory	Optional	Total
	(Thousand Pesos)		
1946	658	3	661
1947	5,832	18	5,850
1948	6,720	23	6,743
1949	13,280	48	13,328

5. The present collections of the Rehabilitation Finance Corporation average ₱2.5 million a month.

6. Capital newly paid into corporations, partenrships, and cooperatives amounts to about ₱60 million a year.

	Newly Registered Firms Paid-in Capital	Old Firms Additional Paid-In Capital
	(Thousand Pesos)	
1945	19,842	——
1946	48,767	39,068
1947	49,852	24,380
1948	36,272	28,222
1949	33,557	30,802
1950 (up to June 30 only)	22,721	13,405

7. While the early rehabilitation of agriculture and industry was to some extent financed with tax revenues, very little can be expected from this source now on account of the present condition of the finances of the government.

8. The extent of private hoarding of cash, not to mention other valuable personal property, that obtains in the economy is strikingly indicated by the amount of treasury certificates of the large denominations that is outstanding outside banks' vaults in the hands of the public as of December 31, 1949.

Treasury Certificates Outside all Bank Vaults
As of December 31, 1949

Outside Central Bank Vaults	
₱500's	₱ 18,505,250
100's	91,182,100
50's	95,459,900
20's	200,027,260
10's	85,316,675
5's	29,905,160
2's	10,540,035
1's	14,875,201
	₱545,811,581
Certificates in Other Bank Vaults (Except the Central Bank)	50,305,739
Treasury Certificates in the hands of the public	495,505,842

Even on the unlikely possibility that the certificates held by the banks are all of the ₱500 and ₱100 denominations, there would still be about 59 million of ₱100 bills in the hands of the public.

9. On the basis of remittances during the first six months of 1950, foreign investments might amount to about ₱3 million this year. Due to exchange control a large portion of the profits or foreign corporations is also being invested in the Philippines.

10. In addition to the ₱54 million advanced by the Central Bank to the Government up to December 31, 1949, a balance of ₱146 million may still be released up to June 30, 1951 for development projects.

The contributions from these different sources may be summarized as follows:

Savings and time deposits including Postal Savings Bank	₱ 33 million
Premium income of life insurance companies including Government Service Insurance System	30 ,,
Rehabilitation Finance Corporation — regular collections	30 ,,
Capital newly paid into private corporations, partnerships and cooperatives	60 ,,
Private foreign capital	3 ,,
Private hoards	59 ,,
Central Bank	146 ,,

III. Feasibility of Investment Targets and of Raising Required Peso Funds.

The magnitude of annual investment called for in the program does not appear out of line with the estimated annual capital formation for the economy as shown in the preceding chapter. However, because of the substantial reduction in the import surplus due to the trade controls and the increase in export income, an increase in inflationary pressures would occur in all likelihood, in spite of the big decline in U. S. Government payments. This should be apparent especially by 1951 when existing inventories of imported items shall have gone down substantially.

(Million Pesos)

	1949	1951
Imports (C.I.F.)	1,257	628
Exports	530	584
	727	44
U. S. Government payments ..	647	208
	(80)	164

A run-away inflation under these conditions might develop if substantial government deficit spending and indiscriminate bank lending should continue concurrently with the implementation of the investment program. It should be borne in mind that an investment program itself in the present circumstances would be inflationary even when the bulk of funds spent comes from savings of the community. However, this risk could be minimized and kept within manageable bounds by monetary and credit policies strengthened and supported by appropriate fiscal policies, administration and management that seeks to eliminate deficit spending and implements aggressively an adequate prgram of raising tax revenues. The exercise of a high order of skill in monetary and credit management with respect to the timing, direction and magnitude of investment and an acceleration of the local production of essential consumables would minimize a great deal the upward pressure on prices. It is equally vital, in order to avoid the pitfalls of inflation while carrying out the development program, that great care is exercised in the assignment of priorities to the scheduling and the administration of projects and that funds invested are efficiently utilized.

It is to be emphasized that under present conditions the funds needed to prosecute the economic development program should come whenever possible from private and institutional savings. Too great a reliance on credit expansion by banks, supported by Central Bank credit, can feed the growth of serious inflationary pressures. Since the extent to which public borrowing may be resorted to both for budgetary and development expenditures is extremely limited, great care should be exercised to avoid misdirection of the limited financial resources available into less productive fields and allocation of the nation's savings and tax receipts to unncessary or postponable expenditures. It should be remembered that in the initial years of the program the possible amount of funds that might be raised by domestic borrowing would be much less than the amounts that the potential sources might yield, as detailed above due to the lack of a developed securities market. Yet it is necessary as stressed before, that as far as possible the projects in the program be financed through domestic borrowing if inflationary pressures were to be minimized. The development of a broad Government securities market should be vigorously pursued. In this task, the Central Bank should receive the support of every branch and instrumentality of the Government. Even if there were no need to raise funds for a devevlopment program, the Government should have a non-inflationary domestic source of funds besides taxes upon which to draw when the need arises.

IV. Foreign Exchange Costs

At the beginning of 1949 it seemed that there would be no difficulty in meeting the foreign exchange requirements of the government development program of 1948. However, in view of the substantial reduction of the foreign exchange resources during 1949 as a result of large trade deficits and the reduction in the volume of United States Government payments, the foreign exchange requirements in the future would have to be met primarily with savings resulting from the enforcement of trade and exchange controls, private foreign capital and foreign loans. A great deal of care would have to be exercised in the management of the import controls if the pressures developing from the tense international situation and the declining supply of imported non-essentials were to be resisted in order that the import targets assumed in the following balance of payments estimates might be satisfactorily achieved. More experience has to be built up in the administration of the controls and greater efforts should be exerted to widen their acceptance by the public as an abiding feature of business life in the Philippines. In the meantime, the local production of substitute essential goods should be speeded up because, as they increase, an increasing amount of foreign exchange could be deployed to meet the requirements of the development program. Foreign exchange expenditures for luxury and non-essential imports must be reduced to the minimum, if not completely eliminated.

The temporary credit facilities extended by foreign banks may be availed of but they should be used sparingly in order not to create any undue burden on the future balance of payments position, considering the short term nature of the credit being offered. For the first six months of 1950, foreign capital investments in the Philippines amounted to $1.5 million. It is expected that foreign private capital which has shown interest in investment in the Philippines since the imposition of trade and exchange controls could be counted upon also as a source of foreign exchange. Central Bank exchange policy would have to continue to be flexible within the limits of availabilities in order to maintain and if possible increase incentives to private foreign capital investment in the country.

In order to determine the impact of the program on the future balance of payments position and the feasibility of its foreign exchange requirements in the light of existing and accruing resources, a projection of estimated foreign receipts and disbursemenets was made for the years 1950 to 1954.

Exports

Export estimates were based on production targets set by the program and in the case of copra and sugar, the opinion of those in the industry. It is believed that in view of the Korean situation and its repercussions, the prices of sugar, copra, coconut oil and abaca will firm through 1951 at the average level reached in the first half of 1950. In the case of sugar, it was assumed that the quota for domestic consumption would remain at 200,000 short tons for the next four years. This amount is believed more than what is actually required locally but in view of the increased requirements of local industries due to the curtailment of imports and because of the comparatively higher prices fixed for sugar flowing into the domestic market, the practicability of reducing this amount appears slim. The increase of almost $32 million in export estimates for 1951 over 1950 would be due primarily to sugar. Given favorable weather conditions and assuming that prevailing prices continue, it is the opinion of those thoroughly familiar with the industry that this increment in exports by 1951 would not be difficult to attain. Increases are also expected to occur in abaca and metallic minerals, the first because of the coming into production of areas rehabilitated with the aid of R. F. C. loans and new postwar plantings, and the second, because of the good prospects for base metals and manganese at the present time. The decline anticipated by 1952 would be due mainly to the substantial decline expected in the prices of copra and coconut oil beginning that year.

Imports

In estimating imports for each year up to 1954 account was taken of the import experience during the first six months of 1950 and of the allowable amounts for each category of goods established under the new Import Control Law (which did not come into full operation until the month of June) and the trade agreement with SCAP. The Import Control Law classifies all imports into three categories: quota goods, non-quota goods and ex-quota goods.

Quota goods are those specifically enumerated in four appendices attached to the law; it appears from a recasting of the import data for the first six months of 1950, in accordance with the new law that the total value of items falling within these appendices is slightly more than the goods and articles controlled under the old import control regulations embodied in Executive Order No. 295, as amended. The four appendices to the law divide quota goods into prime commodities, essential commodities, non-essential commodities and luxury commodities.

Non-quota commodities are those imports which are not specifically enumerated in the appendices. The importation of these commodities from January, 1950 up to the end of May, 1950, was controlled by Notification to Authorized Agents No. 10 of the Exchange Control Department of the Central Bank, which restricted their importation to 6 per cent per month of the import value of such items in 1949. In the implementation of the new Import Control Law the Import Control Board clasified these goods into machinery, raw materials and essential consumption goods and restricted importation per month to varying percentages of the value of such goods in 1948. The percentages fixed at present for various categories are 4, 5, 6 and 7 percent per month.

Ex-quota goods are those provided for under Section 8 of the new Import Control Law which allows importation without quota of the following:

> "SEC. 8. The following imports shall be admitted without import quota allocation:
>
> "(1) Raw materials imported to be used in the manufacture of commodities constituting prime and/or first necessity imports, as defined in this Act, as well as raw materials which in themselves constitute prime and/or of first necessity imports and essential imports, when used in local or in the manufacture of dollar-saving and dollar-producing commodities, if such raw materials are not sufficiently available in the Philippines.
>
> "(2) Articles, goods and commodities intended solely for the personal use of the person importing provided no foreign exchange is used.

"(3) Supplies and equipments intended solely for the use of the Armed Forces of the Philippines and of the United States of America, Philippine Government and semi-government hospitals and of the Philippine National Red Cross, books, supplies and equipments for schools and those for the use of the community chest and other duly registered charitable organizations and charitable missionary establishments.

"(4) Articles, goods and commodities imported in exchange or bartered with Philippine products, except luxury imports as defined in this Act and controlled non-essential imports produced or manufactured locally in sufficient quantities to meet the demand of the public: Provided, That the Import Control Board shall determine what Philippine exports shall not be permissible for barter purposes under the provisions of this Act.

"(5) Goods intended solely for use in religious rites and ceremonies.

"(6) Goods imported pursuant to the provisions of any Price Control Law or regulation.

"(7) Goods intended solely for rent, lease or exhibition: **Provided,** That at least twenty-five per centum of the gross rentals, royalties and earnings paid therefor shall not be allowed for remittance abroad."

The assumptions on which import estimates were based are as follows:

For prime commodities, it was assumed that the level of importation in 1951 would be at that provided by the Import Control Law after applying minimum percentage cuts. This is only about $700 thousand less than the importation in 1950 on an annual basis. For 1952 on to 1954 it was assumed that these commodities would be subject to the medium percentage cuts provided for them by the new Import Control Law.

For essential commodities it was assumed that the medium percentage cuts provided by the new Import Control Law would be applied each year from 1951 to 1954. This is only about $40 thousand less than the 1950 importation on an annual basis.

For non-essential and luxury commodities, estimates were formulated on the assumption that the maximum percentage cuts provided by the new Import Control Law would be applied each year through to 1954.

For non-quota machinery and equipment imports, it was asumed that the level would remain for each year up to 1954 at that attained during the first six months of 1950.

For raw materials in the non-quota classification estimates for 1951 were based on percentage cuts of 3, 4, 5, 6 and 7 percent per month of 1948 imports of such goods. For 1952 to 1954, however, these estimates were increased to 4, 5, 6 and 7 percent per month of 1948 imports.

Non-quota consumption goods imports for the years 1951 and 1952 were assumed to be at 3, 4, 5 and 6 percent per month of 1948 imports. Beginning in 1953 on to 1954, these percentages would increase to 4, 5, 6 and 7 percent per month of 1948 imports.

Ex-quota goods are now being imported at the rate of $5 million per month. For 1951 this level would be reduced to $4 million but beginning with 1952 on to 1954 the present allowance of $5 million per month would be restored.

No allowances were made for possible declines in the prices of imported goods. The Korean situation and the cold war will probably make unlikely any such declines in the foreseeable future. It is expected that if the program proceeds as scheduled the expansion of industries would require substantial amounts of raw materials beginning with 1952. The estimates with respect to consumption goods may have to be revised upward for later years especially after existing inventories in the country shall have been exhausted unless extensive production of substitutes are induced and local production of essential articles increase rapidly. The import requirements for each year of the development program was stated out separately from other imports. For the year 1950 these requirements were stated at $10 million only, representing the amount that will probably be brought in from July to December. The balance of these requirements that already came in were allowed for in the estimate of other imports.

The percentage reduction in the volume of different import categories for 1950, 1951 and 1952 from volume levels reached in 1948, is shown by the following table:

ANALYSIS OF THE EFFECTS OF IMPORT CONTROL LAW (426) ON VOLUME AND VALUE WITH 1948 AS BASE

(C.I.F. Values[a] in Million Dollars)

		1950		1951		1952	
	1948 Value	Value	Percent Change from 1948	Value	Percent Change from 1948	Value	Percent Change from 1948
I. **Quota Goods:**							
Appendix A—Prime Commodities . . .	$ 21.9	$ 14.4	—25.4	$ 18.3	— 5.2	$ 14.0	—27.4
Appendix B—Essential Commodities	60.6	20.2	—62.2	22.5	—67.8	22.5	—57.8
Appendix C—Non-essential Commodities	185.0	50.7	—63.1	32.2	—76.6	32.2	—76.8
Appendix D—Luxury Commodities	64.9	14.2	—75.2	5.8	—89.9	5.8	—89.5
II. **Non-Quota Goods:**							
Machinery & Equipment .	52.9	51.5	+10.3	37.2	—20.4	37.2	—20.4
Raw Materials	127.2	136.4	+21.7	121.7[b]	+ 8.7	149.0[b]	+24.8
Consumption Goods	134.4	110.6	— 0.7	76.2	—35.2	72.2	—38.9

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[a] Actual values. To compute for the reductions in volume, the actual values were divided by the United States export price indices of 193 for the 1948 and 170 for 1950, 1951 and 1952 (base year 1937; Source, *International Monetary Fund Statistics*, June, 1950).

[b] Ex-quota Goods included value at $48 million in 1951, $60 million for 1952 and $60 million for 1953.

The volume of prime commodity imports (Appendix A) in 1950 would be lower than the level in 1948 by 25 per cent, in 1951 it would be below the 1948 level by 5 percent, for 1952, it would go down again to about 27 percent less than for 1948.

The volume of essential commodities (Appendix B) would be cut in 1950 by 62 percent as measured from the level of 1948, in 1951 it would go down still further to 67 per cent; it would go up in 1952 to 57.8 percent less than the 1948 level.

Non-essential and luxury commodities (Appendices C and D) in 1951 and in 1952 would be 77 and 90 percent less in volume, respectively, than the level of 1948. The importation of these commodities during the first half of 1950 was running at 63 percent and 75 percent less than the levels of 1948.

Machinery and equipment imports in 1951 and 1952, outside of the requirements of the development program, would be adequate to maintain existing industries.

Raw material imports including ex-quota goods for 1951 and 1952, outside of the requirements of the development program, would increase in volume by 8.7 percent in 1951 and 24.8 percent in 1952 over the levels of 1948, thus taking due account of increasing raw material needs of existing industries.

Consumption goods in the non-quota category would be cut in volume beginning 1951 from the levels of 1948 by approximately 35 to 40 percent.

Invisibles

The estimates also assumed that backlog obligations and contingencies would be completely settled by the end of 1951 and that remittances of earnings, profits, interests, and dividends would be made at the rate which would probably prevail during the second half of 1950. The experience during the first half of 1950 for this item could not be used as basis of future projections because payments allowed during those months are believed to be below the expected normal. Payments for services, travel, education, subsistence and similar expenses abroad, as well as donations, contributions and miscellaneous purposes are expected to be restricted further after 1950.

Conclusion

It appears from these projections that if investment targets were attained as set out in the program, deficits would be incurred during the years 1951, 1952 and 1953, in the total amount of $130.4 million. A small surplus of $3.6 million would begin to appear in 1954. The deficit of $52 million in 1952 and $55.1 million in 1953 woud be incurred after installment payments on the budgetary loan from the United States Reconstruction Finance Corporation shall have been made of $25 million in 1952 and $35 million in 1953. Within the framework of assumptions made the international reserve after 1953 would be reduced from the present level to about $130.6 million. If the installments on the United States R. F. C. budgetary loan could be refunded, the reserves after 1953. would only decline to about $190 million.

The Commission believes that the international reserve should be maintained at the present level of $260 million, in order not to impair confidence in the value of the peso. The country, therefore, would be in need of foreign assistance to carry out this program to the extent of $130 million. If the outstanding United States RFC loan could be refunded, the additional assistance required is $70 million.

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INDUSTRIES

Projects	Estimated Investment 1948 Program (Pesos)	Estimated Outlay for 1949 (Pesos)	Actual Allotment for 1949 (Pesos)	Revised Estimated Investment for 1950-1953 (Pesos)	SCHEDULE OF CAPITAL REQUIREMENTS								VALUE OF ANNUAL PRODUCTION			
					1950		1951		1952		1953					
					Foreign Exchange (Pesos)	Local Currency (Pesos)	Foreign Exchange (Pesos)	Local Currency (Pesos)	Foreign Exchange (Pesos)	Local Currency (Pesos)	Foreign Exchange (Pesos)	Local Currency (Pesos)	After Completion of Program 1954 (Pesos)	1951 (Pesos)	1952 (Pesos)	1953 (Pesos)
Textiles																
Textile Plant	21,000,000	4,200,000	900,000g	1,760,000g	550,000	1,210,000	--	--	--	--	--	--	4,000,000	--	4,000,000	4,000,000
Knit Mills	3,300,000	900,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ramie plant				5,600,000P	400,000	200,000	4,000,000	1,000,000	--	--	-	--	15,000,000	5,000,000	15,000,000	15,000,000
Jute Spinning plant				3,000,000P	1,870,000	1,130,000	--	--	--	--	--	--	12,000,000	12,000,000	12,000,000	12,000,000
Rayon Plant				18,000,000P	--	--	3,000,000	6,000,000	3,000,000	6,000,000	--	--	18,000,000	--	-	18,000,000
Net Manufacturing	1,200,000	1,200,000	125,000P													
Power and Fuels																
Hydroelectric Plants	152,000,000	15,000,000														
a) Lumot			1,000,000g	4,000,000g	200,000	3,800,000	--	--	--	--	--	--	1,250,000	1,250,000	1,250,000	1,250,000
b) Ambuklao				90,000,000g	2,000,000	8,000,000	28,000,000	12,000,000	20,000,000	10,000,000	--	10,000,000	9,000,000	--	--	9,000,000
c) Binga																
d) Maria Cristina				5,000,000g	1,500,000	1,000,000	1,500,000	1,000,000	--	--	--	--	1,500,000	--	1,500,000	1,500,000
e) Small projects			362,182g	7,000,000g	1,000,000	500,000	1,500,000	1,000,000	1,500,000	500,000	500,000	500,000	1,900,000	350,000	1,500,000	1,900,000
Steam and Diesel plants	43,200,000	4,800,000	16,305,785P													
Gas plants	3,200,000	2,700,000	431,876P													
Oil Refinery			--	24,000,000P	8,500,000	3,500,000	8,500,000	3,500,000	--	--	--	--	1,800,000x	--	1,800,000	1,800,000
Alcohol Refinery	32,000,000	8,000,000	--	3,000,000P	--	--	800,000	200,000	800,000	200,000	800,000	200,000	900,000	--	400,000	900,000
Malangas Coal Mine				1,500,000g	--	--	1,200,000	300,000	--	--	--	--	3,000,000	--	3,000,000	3,000,000
Iron and Steel																
Steel Rolling Mills			40,000g	4,460,000g	3,000,000	560,000	400,000	500,000	--	--	--	--	5,400,000	--	5,400,000	5,400,000
Shipyard and DryDock			515,230g	13,000,000g	2,400,000	1,000,000	700,000	4,300,000	400,000	4,200,000	--	--	9,500,000	--	3,000,000z	9,500,000
Nail Manufacturing	500,000	500,000	125,000P													
Coke	2,700,000															
Paper and Manufacturing																
Paper Mills	3,600,000	3,600,000	2,523,143g													
Pulp Mills (Angeles)	2,800,000	800,000	891,050g	1,200,000g	500,000	700,000	--	--	--	--	--	--	1,000,000	1,000,000	1,000,000	1,000,000
Paper Containers	1,000,000	1,000,000	2,999,008P													
Machinery																
Agricultural Implements	1,500,000	800,000	459,186P	900,000P	--	--	200,000	700,000	--	--	--	--	1,000,000	--	1,000,000	1,000,000
Lamp Factory	2,630,000	2,630,000	375,000g													
Aluminum Rolling Plant			1,536,950P	4,000,000P	--	--	--	--	2,500,000	500,000	750,000	250,000	3,000,000	--	--	3,000,000
Chemicals																
Ammonium sulfate Fertilizer	28,800,000	--	--	11,000,000g	4,000,000	1,500,000	4,000,000	1,500,000	--	--	--	--	8,000,000	--	8,000,000	8,000,000
Superphosphate	3,000,000	23,170,000	--	2,630,000P	--	--	760,000	1,070,000	--	--	--	--	3,500,000	--	3,500,000	3,500,000
Agricultural Lime				1,800,000P	480,000	120,000	480,000	120,000	480,000	120,000	--	--	800,000	300,000	800,000	800,000
Caustic Soda-Chlorine				1,500,000P	450,000	300,000	450,000	300,000	--	--	--	--	800,000	--	800,000	800,000
Insecticides	600,000															
Other Chemicals				1,000,000P	80,000	20,000	220,000	80,000	250,000	50,000	250,000	50,000	1,600,000	160,000	540,000	1,600,000
Other Industries																
Plywood	2,300,000	300,000	463,121P													
Wall Board	2,000,000	2,000,000														
Windows	700,000	700,000	571,625P													
Furniture	2,000,000	350,000	482,500P													
Bottles	5,000,000	5,000,000	8,000,000P													
Cement	5,800,000	400,000	230,000P 5,414,218g													
Barrels	570,000	570,000														
Ice plants	2,700,000	900,000	1,168,870P													
Fish	2,000,000	600,000	184,758g													
Fish Meal	600,000															
Shark Liver	300,000															
Fruits	5,300,000	1,000,000	87,855P													
Pasteurizing Station	1,400,000															
Leather	10,000,000	2,000,000	750,000P													
Cutch	650,000															
Embroidery	2,000,000	800,000	20,000P													
Misc. Handicrafts	1,300,000	900,000	15,000P													
Misc. Industries	16,000,000	3,200,000	4,727,148P	8,000,000P	1,250,000	750,000	1,250,000	750,000	1,250,000	750,000	1,250,000	750,000	10,000,000	2,500,000	5,000,000	10,000,000
TOTALS –	383,850,000	87,820,000	50,710,305	212,350,000	28,180,000	24,290,000	56,960,000	35,120,000	30,180,000	22,220,000	3,350,000	11,750,000	112,950,000	22,560,000	69,280,000	112,950,000

p — Private enterprise.　g — Government project.　x — Less imported crudes.　z — Less imported steel.

MINING

Category	Estimated Capital Investment 1948 . project (Pesos)	Estimated Outlay for 1949	Actual Allotment During 1949	Revised Estimated Investment 1950 - 1953	1950		1951		1952		1953		Grand Total (1950 - 1953)		
					Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Total	Foreign	Local
Gold	30,000,000	12,000,000	5,353,125	10,000,000	1,000,000	100,000	1,500,000	1,500,000	1,500,000	1,000,000	1,500,000	1,000,000	10,000,000	5,500,000	4,500,000
Chrome	2,200,000	800,000	2,818,443	1,000,000	300,000	700,000	--	–	–	--	--	–	1,000,000	300,000	700,000
Copper	12,000,000	3,000,000	704,194	4,000,000	200,000	1,000,000	800,000	500,000	500,000	500,000	350,000	150,000	4,000,000	1,850,000	2,150,000
Manganese	4,000,000	1,200,000	21,862	1,200,000	--	–	500,000	700,000	--	–	–	–	1,200,000	500,000	700,000
Lead	–	–	–	–	--	--	–	–	–	--	--	–	--	–	–
Coal	5,000,000	1,600,000	938,426	1,500,000 (a)	--	–	–	--	500,000	250,000	500,000	250,000	1,500,000	1,000,000	500,000
Asbestos	1,000,000	300,000	-	300,000	--	--	–	–	100,000	100,000	50,000	50,000	300,000	150,000	150,000
Iron Ore	4,000,000	1,200,000	1,095,736	2,000,000	250,000	1,800,000	200,000	–	–	-	350,000	400,000	2,000,000	800,000	1,200,000
Salt	2,000,000	–	–	500,000	--	--	--	200,000	100,000	–	150,000	50,000	500,000	250,000	250,000
Exploration	5,000,000	1,000,000	--	1,500,000	250,000	500,000	-	100,000	300,000	150,000	100,000	100,000	1,500,000	650,000	850,000
	P65,200,000	P21,100,000		P22,000,000	2,000,000	4,000,000	3,000,000	3,000,000	3,000,000	2,000,000	3,000,000	2,000,000	22,000,000	11,000,000	11,000,000

(a) Exclusive of Malangas mine included in industrial program.

PUBLIC WORKS

Class	Estimated Output Investment 1948 program (Pesos)	Estimated Outlay 1949 (pesos)	Actual Allotment During 1949 (Pesos)	Revised Estimated Investment 1950 - 1953 (pesos)	SCHEDULE OF CAPITAL INVESTMENT 1950 Foreign Exchange (Pesos)	1950 Local Expenditure (Pesos)	1951 Foreign Exchange (Pesos)	1951 Local Expenditure (Pesos)	1952 Foreign Exchange (Pesos)	1952 Local Expenditure (Pesos)	1953 Foreign Exchange (Pesos)	1953 Local Expenditure (Pesos)
Rock Quarries	2,000,000	200,000	368,070.03	--	–	--	--	–	–	--	–	--
Public Buildings	6,800,000	400,000	5,072,915.96*	8,000,000	400,000	1,600,000	400,000	1,600,000	400,000	1,600,000	400,000	1,600,000
Schools, Hospitals and Markets	64,600,000	2,600,000	--	-	-	--	--	--	--	--	--	--
Military Installations	10,000,000	500,000	6,886,832.42	5,000,000	250,000	1,000,000	250,000	1,000,000	250,000	1,000,000	250,000	1,000,000
Highways	44,000,000	1,500,000	15,040,296.80 x	30,000,000	1,500,000	6,000,000	1,500,000	6,000,000	1,500,000	6,000,000	1,500,000	6,000,000
Sanitation	24,000,000	1,000,000	--	3,000,000	200,000	600,000	200,000	600,000	200,000	600,000	150,000	450,000
Water Supply	24,000,000	1,050,000	4,431,799 33 z	16,000,000	1,500,000	2,500,000	1,500,000	2,500,000	1,500,000	2,500,000	1,500,000	2,500,000
Flood Control and Drainage	8,000,000	400,000	3,370,464.81	4,000,000	200,000	800,000	200,000	800,000	200,000	800,000	200,000	800,000
Port Improvements	29,580,000	1,120,000	1,951,240.88	7,000,000	500,000	1,400,000	400,000	1,300,000	400,000	1,300,000	400,000	1,300,000
TOTALS—	212,980,000	8,770,000	37,121,629.23	73,000,000	4,530,000	13,900,000	4,450,000	13,800,000	4,450,000	13,800,000	4,400,000	13,650,000

* — Exclusive of buildings built with War Damage Commission funds.
x — Exclusive of highways built with USPRA funds.
z — Exclusive of waterworks financed by War Damage Commission.

TRANSPORTATION AND COMMUNICATION

Class	Estimated Output Investment 1948 program (Pesos)	Estimated Outlay 1949 (Pesos)	Actual Allotment During 1949 (pesos)	Revised Estimated Investment 1950-1953 (Pesos)		SCHEDULE OF CAPITAL INVESTMENT							
						1950		1951		1952		1953	
						Foreign Exchange (Pesos)	Local Expenditure (Pesos)	Foreign Exchange (Pesos)	Local Expenditure (Pesos)	Foreign Exchange (Pesos)	Local Expenditure (Pesos)	Foreign Exchange (Pesos)	Local Expenditure (Pesos)
Railroads	70,000,000	28,000,000	2,916 000		40,000,000	6,500,000	3,500,000	6,500,000	3,500,000	6,500,000	3,500,000	6,500,000	3,500,000
Shipping	27,600,000	18,200,000	10,336,407	Inter-island	2,500,000	—	—	1,300,000	—	500,000	100,000	500,000	100,000
				Ocean going	9,440,000	5,900,000	—	3,540,000	—	—	—	—	—
Telecommunications	50,000,000	11,800,000	2,884,822	Telephone	8,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
				Telegraph & Radio	6,000,000	1,000,000	500,000	1,000,000	500,000	1,000,000	500,000	1,000,000	500,000
Trucks and Busses	230,000,000	46,000,000	28,428,035 2,312,807		42,000,000	11,000,000	—	10,600,000	—	10,400,000	—	10,000,000	—
Aircraft, etc.	31,000,000	6,800,000	5,117,879			1,100,000	1,000,000	1,100,000	1,100,000	750,000	750,000	750,000	750,000
	408,600,000	110,800,000	51,775,810		107,940,000	26,500,000	8,000,000	25,040,000	6,100,000	20,150,000	5,850,000	18,750,000	5,830,000

COTTON TEXTILE MILLS

I. THE PROJECT

This project consists of the erection of a Spinning Mill at Narvacan Ilocos Sur. This Spinning Mill is intended to stimulate the expansion of the home weaving industry of the Ilocos provinces by providing therefor a steady and sufficient supply of yarn to the native weavers. The mill will have 17,000 spindles with a capacity of 10,000 lbs. of yarn daily or 3,000,000 lbs. annually. The estimated cost of this project is ₱2,540,000 distributed as follows:

Land and building	₱ 680,000
Machinery, including transportation, installation and spare parts	1,800,000
For construction of pier	60,000
Total	₱2,540,000

Of the above total of ₱2,540,000, only ₱1,760,000 is required, the rest of the amount having been previously released. The remaining foreign currency requirement is estimated at ₱550,000.

II. ECONOMIC JUSTIFICATION

The largest single item in our imports has always been textiles and textile manufactures. In 1940 this item accounted for 22.4% of our total imports and in 1948, it was 23.1%. While in 1940 the value of our imports under this item was only ₱60.6 million, the value in 1948 reached the staggering sum of ₱262.4 million. It is estimated that our annual requirements of cotton cloth alone is about 170 million square yards. It is, therefore, seen that the output of the proposed mill would be readily absorbed.

The estimated annual expenses of the mill total ₱3,408,700.00 while the estimated income from the sale of the products is ₱4,000,000.00, leaving a net surplus of ₱501,300 or 19.8% of the capital investment.

III. GENERAL REMARKS

The Spinning Mill is now under construction and is expected to start production sometime during the last quarter of this year. This mill, in addition to the 38,000-spindle plant of the N.D.C. now in operation, will increase the local textile output to 25,000,000 square yards annually or approximately 14% of the imports of those goods.

JUTE SPINNING PLANT

I. THE PROJECT

The Philippine Fiber Processing Corporation, a private concern, is now undertaking this project which will require an estimated capital outlay of ₱3,000,000. The plant will manufacture 16,000,000 jute bags and sacks annually from jute, saluyot, maguey, banana and such other fibers as are available locally. It will be located in Pandacan near Manila. The installation will consist of 200 looms in two complete operating units of 100 looms each. The first unit is expected to go into operation before the end of this year and the second, early in 1951.

II. ECONOMIC JUSTIFICATION

In 1948, our imports of jute burlap and jute bags amounted to ₱13.0 million. Jute burlap alone accounted for ₱9.7 million of this amount, representing 30.5 million square yards of burlap. This project will be able to supply most of the local requirements of bags and sacks and will save an estimated ₱10 million annually even with partial importation of jute fibers during the initial period of operation when sufficient local raw materials cannot be obtained. Farmers will be encouraged to plant jute, kenaf, ramie, maguey and other fibers either singly or in rotation with other crops in order to supply the requirements of the plant. Thus, the country will become self-sufficient in bags and sacks and save foreign exchange for the purchase of essential products that cannot be manufactured locally.

HYDROELECTRIC PROJECTS

Under this industrial program are included two large hydroelectric developments and a group of small to medium size projects scattered all over the islands. The large developments are the Ambuklao in Northern Luzon with a capacity of 75,000 kw and the 25,000 kw Maria Cristina Plant in Lanao. The aggregate capacity of the small plants total about 8,000 kw.

(A) AMBUKLAO HYDROELECTRIC PROJECT

I. THE PROJECT

This hydroelectric project is the farthest upstream of a series of plants planned on the Agno River in Northern Luzon. It is located near the barrio of Ambuklao, about 40 kilometers by road from the City of Baguio. Its main features are a dam, 131 meters high of rolled earth and rockfill; two diversion tunnels, seven meters in diameter each; and underground powerhouse, 10.5 meters by 30 meters long; and a gothic arch tailrace tunnel, 6.4 meters wide by 7.6 meters high and 2.4 kilometers long. It will have storage capacity of 258 million cubic meters which will increase the minimum flow of the river from six cubic meters per second to forty cubic meters per second. The rated capacity of the proposed development is 75,000 KW and the annual energy availability is 330 million KWH after due provision for transmission losses. In addition to the plant, a 230,000-volt transmission line will be installed from the plant to the Manila area with suitable substations at both ends of the line. Initially, the distribution of power will be in the immediate vicinity of the plant at Baguio and in the City of Manila and its environs. Gradually, substations and distribution lines will be set up in Central Luzon for the delivery of power to these vital agricultural and population areas.

The cost of the project is estimated very conservatively at ₱99,000,000, distributed as follows:

ITEM	TOTAL AMOUNT	FOREIGN CURRENCY AMOUNT	LOCAL CURRENCY AMOUNT
TOTALS	₱99,000,000	₱59,000,000	₱40,000,000
HYDRAULIC PLANT —			
Land and land rights	₱ 510,000	——	₱ 510,000
Structures and improvements	3,090,000	₱ 1,456,500	₱ 1,633,500
Reservoirs, dams and waterways	₱54,774,000	₱32,984,060	₱21,789,940
Waterwheels, turbines and generators	4,670,000	4,194,000	476,000
Accessory electric equipment	964,000	802,600	161,400
Miscellaneous power plant equipment	502,000	420,000	82,000
Roads and Bridges	870,000	290,000	580,000
Village	200,000	60,000	140,000
Total Hydraulic Plant	₱65,580,000	₱40,207,160	₱25,372,840
TRANSMISSION PLANT —			
Land and land rights	₱ 410,000	——	₱ 410,000
Clearing land	150,000	——	150,000

ITEMS	TOTAL AMOUNT	FOREIGN CURRENCY AMOUNT	LOCAL CURRENCY AMOUNT
Structures and improvements	1,106,000	580,000	526,000
Station equipment	7,190,000	6,356,000	834,000
Towers, poles and fixtures	4,852,000	3,480,000	1,372,000
Overhead conductors and devices	3,102,000	2,270,000	832,000
Total Transmission Plant	₱16,810,000	₱12,686,000	₱ 4,124,000
GENERAL PLANT —			
Communication equipment.	₱ 150,000	₱ 120,000	₱ 30,000
SUB-TOTAL DIRECT COST	₱82,540,000	₱53,013,160	₱29,526,840
Engineering and Contingencies	₱16,460,000	₱ 5,986,840	₱10,473,160

It will be noted that ₱40,000,000 will be our peso expenditures and ₱59,000,000 will be the dollar or foreign exchange requirements. The negotiations for a loan to cover the foreign exchange requirements of this project is now pending with the International Bank for Reconstruction and Development.

The above estimate which was submitted with the loan application was made conservative for obvious reasons. It is believed that the project could be undertaken at ₱90,000,000.

II. ECONOMIC JUSTIFICATION

A very detailed and elaborate survey of the power market for this proposed development has been undertaken and a detailed report thereon prepared and submitted to the International Bank. The report has shown that by 1953, the power requirements only of the cities of Manila and Baguio will amount to 723 million KWH with a demand of 145,000 KW. On the other hand, the net energy capability of the generating plants at that time, excluding the Meralco's Blaisdell and Rockwell Steam Plants which burn imported fuels, will be 233 million KWH. It is, therefore, seen that the power and energy from the Ambuklao Project will be immediately absorbed as soon as it becomes available and, even the considerable steam energy will still have to be provided.

The annual expenses for the Ambuklao plant alone and its complementary lines and substations will be ₱7,240,000, summarized as follows:

Interest and amortization for dollar loan	₱4,320,000
Interest and sinking fund payments for local loan .	2,320,000
Administration and general expenses	325,000
Operation and maintenance expenses	275,000
Total	₱7,240,000

Against these expenses, the estimated income from the sale of its power is ₱7,500,000, at the low rates of 2.1 centavos per KWH for large blocks of power and 3.6 centavos per KWH for medium loads. There will, therefore, be an annual surplus of ₱260,000 which will gradually increase as more substations are built in Central Luzon and part of this power diverted to other medium loads in this area.

The Ambuklao Project is a very important dollar-saving project in that it will provide electric energy that will replace energy otherwise to be derived from imported fuels. On the basis of current import prices of fuel, it is estimated that the dollar savings from the output of the Ambuklao plant will be abount ₱3.5 million each year.

The Ambuklao plant has other indirect benefits. Initially, it will increase the minimum flow of the lower Agno River available for irrigation from about six cubic meters per second to forty cubic meters per second. This is a material and distinct benefit, especially when the Agno River Irrigation Project is constructed to serve about 40,000 hertares of rich agricultural lands in Pangasinan. With the availability of cheap electricity in Central Luzon from the Ambuklao, irrigation pumping within the area will be given a very substantial boost. In this respect dual benefits in the form of a low cost pumping and saving dollar outlays for imported fuels will also be realized. Indirect benefits from the plant will also be had in the form of a limited dampening effect during floods which will be of assistance in flood control.

III. GENERAL REMARKS

The power situation in the Manila-Central Luzon area is in a most critical stage. In the year 1949, the peak load of the Meralco System serving Manila and its environs went up to 90,000 KW which was higher than the 87,000 KW total power capability of the generating units, including the NPC Caliraya Plant. Aside from this, there are about 12,000 KW of small diesel units in the City of Manila burning fuel all the time. Any industry that is to be established in this area will have to provide its own power generating facility which will be of the type that will consume imported fuel. Since the need for power is continuously increasing, fuel-burning plants will be built, requiring more imports of fuel, unless hydro power is made available.

The construction of the Ambuklao project is the only immediate measure that can be taken that will curtail or reduce the continued drain of our foreign exchange for these fuel-burning power plants and for the necessary fuel for operating them every year. It can not be assumed that the dollar outlay for power purposes can be saved if the Ambuklao project is postponed because in that event private parties will have to put up their own fuel-burning power plants, the dollar outlays of which will come from the same dollar reserves of the country and which will be greater than the dollar outlays for the Ambuklao plant.

Considering the urgent need for this hydroelectric power for dollar saving purposes and also for the stimulation of agriculture and industry, the President has already authorized the immediate start. For this purpose, the immediate release of an initial amount of ₱10 million has been approved by the Central Bank.

(B) MARIA CRISTINA FALLS HYDROELECTRIC PROJECT

I. The Project

This project, the construction of which is now being undertaken by the National Power Corporation with a capacity of 25,000 KW to supply power to the initial 50,000-metric ton ammonium sulfate plant, is the cheapest of a series of seven plants that can be put up along the Agus River from Lake Lanao to the sea for the fullest utilization of the power resources in this basin. A comprehensive study of the overall development has shown that a total capacity of 736,000 KW could be put up in this river with an annual energy output of 4,895 million kilowatt-hours.

The proposed development at the Maria Cristina Falls site will take off from about half a kilometer above the Falls and discharge at just below the Falls. This development could have a maximum capacity of 200,000 KW and generate annually about 1,300 million kilowatt-hours.

The ₱5 million estimated capital investment for the 25,000 KW initial installation is summarized below:

Land and land rights	₱ 30,000
Access road	100,000
Camps (operator's quarters)	150,000
Rock-fill crib dam	180,000
Approach channel	200,000
Intake structure	330,000
Waterway conduit	220,000
Surge tank	200,000
Penstock	700,000
Powerhouse structure	550,000
Hydraulic equipment	520,000
Electrical equipment	700,000
Miscellaneous equipment (including telephone)	130,000
Transmission line and substations	150,000
Engineering, contingencies and interest during construction	840,000
Estimated Cost	₱5,000,000
Estimated foreign currency expenditure	₱3,000,000
Estimated local currency expenditure	2,000,000

II. ECONOMIC JUSTIFICATION

The engineering feasibility of a combined fertilizer and power development is fully covered in voluminous reports included in and supporting the Philippine Power Program wherein a 126,000-ton fertilizer plant together with an 80,000 KW installation was proposed. However, considering the limited financial resources of the Philippine Government at the present time, and realizing the urgent need for fertilizer in connection with the current food production campaign for self-sufficiency and dollar-saving in rice imports and at the same time for increased dollar producing crops such as sugar, the construction of a reduced development (50,000-metric ton fertilizer plant and 25,000 KW hydroelectric plant) has already been started and is scheduled for completion within the next 24 months. The economic analysis of the fertilizer plant is given under fertilizer project while that for the hydroelectric plant is summarized below:

Estimated Production Expenses:	
Capital fixed charges:	
Interest and sinking fund	**₱ 325,000**
Operating and maintenance expenses	**200,000**
General and administrative expenses	**100,000**
Total estimated annual expenses	**₱ 625,000**
Estimated Income:	
Sale of 180,000,000 KWH to fertilizer plant at ₱0.0045 per KWH	**₱ 810,000**
Sale of 12,000,000 KWH excess energy to surrounding area at ₱0.01 per KWH	**120,000**
Estimated annual income	**₱ 930,000**
Estimated annual Surplus or 6.1% of the capital investment	**305,000**

III. GENERAL REMARKS

This project is a part of an integrated program of power and industrial development centered in the Maria Cristina Power System which will include a fairly diversified industrial pattern. To this end, a 50,000 KW additional installation to furnish power to a proposed steel plant and a second 50,000 metric ton ammonium sulfate plant is being considered. The initial development of the Maria Cristina Falls project may prove to be the beginning of a greatly accelerated economic development of the entire island of Mindanao.

(C) SMALL PROJECTS

Included under this group are power projects in the Talomo River in Davao, Cawayan River in Sorsogon, Montayupan Falls in Cebu, Gasgas River in Ilocos Norte, Sibulan River in Davao, Loboc River in Bohol, Amburayan River in La Union and the Barit River in Camarines Sur. These projects will have a total capacity of about 8,000 KW and will serve the population of thirty-eight (38) towns that are presently without electric service or are generating electric power from diesel engines which require imported fuels. These plants will require a capital outlay of ₱7,000,000, of which ₱4,000,000 represents foreign exchange for the purchase of machinery and equipment not locally available. Preliminary studies on most of these projects have already been completed and it is expected that the average cost of the electric energy produced will be very much lower than even just the fuel cost for the diesel-electric plants.

OIL REFINERY

I. The Project

This is a proposal of the Technical Committee created under Administrative Order No. 83 to establish and operate immediately an oil refinery in the Philippines which will initially process imported crudes pending discovery and development of local oil resources. The Technical Committee further recommended that a proper governmental agency be designated to carry out this proposal.

The Committee Study was undertaken at the instance of the National Economic Council, upon receipt of a paper prepared by Dr. E. W. Rembert of the International Bank for Reconstruction and Development on the feasibility of establishing a refinery in the Philippines.

The oil refinery proposed will have a capacity of 10,000 barrels of crude oil per day. It is estimated that the capital investment required will total ₱24 million, of which ₱18 million represent foreign exchange expenditures and 6 million, the local expenses. This investment is summarized below:

Crude Tapping Unit	₱ 1,800,000
Recycle Cracking Unit	6,000,000
LPG Production, H_2S Removal and Gasoline Treating Facilities	800,000
Boiler Plant, Shop Equipment and other service facilities	3,200,000
Plant Buildings, Foundations and other structures	1,400,000
Stationary Tankage and Piping for 100 days' Crude oil supply and for finished products	4,400,000
Paid-up Royalty on Thermal Cracking and Coking	740,000
Crude Oil and Finished Products Handling Facilities	2,300,000
Transportation, Insurance and Freight Expenses	1,000,000
Installation Costs	2,060,000
Engineering, Organization and Personnel Training Expenses	200,000
Total	₱24,000,000

A similar plant recently built in Livorno, Italy cost the equivalent of $8,000,000, stressing the conservative nature of the above estimate.

The necessary operating capital estimated at ₱6 million, representing production expenses for about 2½ months, will have to be provided for by additional investment or by appropriate credit line arranged with local banks.

II. ECONOMIC JUSTIFICATION

Philippine imports of petroleum products, pre-war and post-war, expressed in equivalent barrels of crude oil from which they were derived are as follows:

YEAR	EQUIVALENT BARRELS OF CRUDE OIL PER DAY
Prewar average	10,000
1946	4,290
1947	25,110
1948	27,500

The above data show that there is sufficient justification for an oil refinery of 10,000 barrels per day initial capacity. Such a capacity will allow for possible decline in the consumption of petroleum fuels which might be brought about by the gradual increase in the development and utilization of hydro power and the reduction in the number of motor vehicles in service as surplus military equipment are gradually retired from use. At the same time, this capacity represents an economic plant size which may be expanded should conditions so warrant.

The monthly production expenses at the rate of 275,000 barrels of crude per month will be as shown below:

Raw material, 275,000 barrels of crude oil at ₱6.90	₱ 1,900,000
Chemicals, including tetraethyl lead, diethanolamine, and inhibitor	111,850
Maintenance and repair expenses	48,700
Fuel for tank trucks, plant boilers and furnaces	71,600
Electricity, 130 kw demand and 67,000 kwh at ₱0.04/kwh	2,750
Labor and supervision	48,200
Administration, sales and other personnel	21,000
Insurance	9,200
Sales expenses, advertising and miscellaneous service	19,200
Taxes and licenses (except Internal Revenue Taxes)	55,000
Total	₱ 2,287,500

If the finished products are sold at current delivered prices in Manila after deducting specific taxes and distribution discounts, the gross monthly income of the plant would be ₱3,701,800, which means a net profit of ₱1,414,300 a month or ₱16,971,000 annually. The capital investment could then be repaid in less than two years. Even assuming that the refinery should pay all taxes and licenses annually paid by local oil companies, including sales, specific, storage, residence, corporation, real estate and income taxes, the annual profit would still be more than ₱13,000,000.

Even in the extreme case where the prices of petroleum products should be reduced to pre-war levels, the refinery can still have a profit of at least ₱3,180,000 annually, which will cover the entire capital investment in 13 years.

With the establishment of the refinery, a saving in our foreign exchange of ₱23,847,800 annually, based on 1948 imports, will be realized. The refinery will also give the Government an effective instrument for the control of the supply of petroleum products, of the prices at which they are sold, and of the allocation of such products among the important users. Prices of petroleum products in the Philippines have been and still are excessive compared to those prevailing in other countries, while on the other hand, the gasoline sold here is definitely below the standard sold in the United States. The refinery will provide a basis for settling a minimum standard of product quality as well as a reasonable price level in the country. Promotion by the Government of desirable industrial enterprises depending on the utilization of large amounts of fuels will be enhanced if it could control the price and the allocation of these products, which heretofore has been in the hands of the oil dealers.

The refinery will also serve as an incentive to a more vigorous prosecution of the exploration and development work on our oil resources because then a definite buyer of any oil that may be uncovered will be available and the uncertainties connected with disposing the crudes in foreign markets will be removed.

In the event of war, the Philippines will have difficulty securing petroleum products if we are not subjected to a blockade. The presence of the refinery will afford us a better opportunity of purchasing crudes for local refining, thereby satisfying partially our essential requirements for such products. When an oil supply is discovered in the country, we will be self-sufficient in our fuel supply to the extent of the refinery capacity.

III. GENERAL REMARKS

It appears that the only difficult problem involved in the establishment of the refinery is a steady source of crude oil supply, pending the discovery of local commercial deposits. This problem is even magnified by certain inferences that the large combines, especially those represented locally, which control most of the world's petroleum business will definitely oppose the establishment of the refinery here and will make it difficult, if not impossible, to operate it. However, it is believed that a determined stand by the Government on the matter of establishment of this refinery will go a long way to secure acceptance of our right to enjoy the advantages to be realized therefrom and to secure their cooperation in bringing about the results desired.

There is no doubt that adequate crude oil supply can be secured from independent operators in the United States, Dutch East Indies and Arabia, as after all, crude oil production and marketing is a business, like all others, and there is every reason to expect that independent suppliers will be agreeable to supply the requirements of the refinery under mutually advantageous conditions. In this connection, it has also been found that Italy, while having no crude supplies of her own or under her control has had no serious difficulties in securing adequate crude supplies for her refineries.

It is also realized that, especially in the initial years of operation of the refinery, local oil dealers may drastically reduce their prices to levels below production costs, in order to show the economic unworthiness of the project. If this reduction, which after all is only a business trick, should occur, the reduction in itself will be for the good of the country and, since it was brought about by the refinery, the refinery should be protected from its ill effects by adopting well-known and appropriate measures which would bring about price stability even in the face of malicious price manipulations.

MALANGAS COAL MINES

I. The Project

The Malangas Coal Mines, located in Zamboanga, is now operated by the National Development Company which proposed the expansion of its activities in order to cope with the future coal requirements of the various industries which will be established under the industrialization program. This mine have a reported reserve estimated at 3.5 to 4.0 million metric tons of coal which is expected to last 20 years at the contemplated peak production of 180,000 metric tons annually. To date, the capital investment in this project total ₱2,800,000 and it is proposed to invest an additional ₱1,500,000 to provide more mining equipment and facilities. Of this amount ₱1,200,000 will be foreign exchange.

II. ECONOMIC JUSTIFICATION

In 1940 our importation of coal was 362,000 metric tons. Our importation of this product since the war has been drastcially reduced due to the widespread use of liquid fuels and the conversion of coal-burning equipment to liquid fuel. The largest consumer of coal now is the cement industry which at the present time is undergoing expansion of its production facilities. It is, therefore, necessary to encourage more production in our coal industry not only to cope with the increased requirements of the cement industry but also to complement our efforts at establishing iron and steel and fertilizer industries of which coal is a vital raw material.

Preliminary estimates of the National Development have shown that with the estimated output of 180,000 metric tons annually, the operating expenses will total ₱2,340,000, while the estimated income from the sale of the coal mined will be ₱3,000,000. This means a surplus of ₱640,000 or 15% of the capital investment.

III. GENERAL REMARKS

The mining of coal in Malangas, using extensively mechanized equipment and modern methods will no doubt place this strategic industry on profitable levels and would promote the use of this fuel in favor of imported liquid fuels.

SHIPYARD AND DRYDOCKS

I. The Project

This project was proposed to develop local shipping and the necessary subsidiary industries, including heavy machinery construction, repair and servicing. It is proposed to be located at the Mariveles area, near the Sisiman Bay. The project will entail an outlay of ₱13 million of which ₱3,500,000 represents foreign currency requirements. The estimated annual output consists of:

Drydock, 2,000—6,000 G. T.	24 boats
Building berth, 3,000-6,000 G. T. .	2 boats
Fishing boats and launches	12 wood and 12 steel boats
Barge construction	48 wood and 24 steel barges
Basin repairs without docking, 800—6,000 G. T.	60 boats
Light craft repairs	410 crafts

II. ECONOMIC JUSTIFICATION

With our long coastline to protect and numerous islands to furnish adequate means of commercial communication and transportation, it becomes imperative to develop local shipping and shipbuilding and repair. Heretofore, repairs and drydocking of even inter-island vessels had to be made in Hongkong and some Japanese ports. The establishment of the proposed project will obviate this necessity and will also conserve foreign exchange, offer additional employment and green opportunities for technical training in an essential defense industry.

It has been conservatively estimated that the gross income of the project when completed will be as follows:

Use of drydocks facilities, ₱160,000 per month	₱ 1,920,000
Construction of 48 wooden barges and 24 steel barges	2,304,000
Construction of 12 wooden fishing boats and 12 steel fishing boats per year	2,500,000
Repairs without docking, at ₱100,000 per month	1,200,000
Light craft repairs	1,000,000
Income from heavy machinery and other miscellaneous items of repair and construction at ₱120,000 per month	1,440,000
Total	₱10,364,000

Against the above income must be charged the following expenses:

Fixed charges:	
Interest on investment at 4-1/2%	₱ 720,000
Depreciation	636,520
Sub-total	₱ 1,356,520
Operating expenses:	
Salaries and wages	₱ 2,900,000
Materials and supplies	4,738,960
Miscellaneous	750,000
Sub-total	₱ 8,388,960
Total production expense	₱ 9,745,480

It can be seen from the above that there will be a net surplus of ₱618,520 or 4.76% of the capital investment.

III. GENERAL REMARKS

There is a critical shortage of drydocking facilities in the Philippines. At present there are no shipyards capable of drydocking vessels over 1,500 tons and the only shipyard which can handle up to 1,500-ton size is the Varadero de Manila. The prewar docking facilities of Engineer Island, Earnshaw Docks, and Yangco Docks, which have been destroyed have not yet been rehabilitated. It is, therefore, urgent to pursue the construction of this project more vigorously so as to insure its completion as soon as possible.

STEEL ROLLING MILL

I. The Project

This proposal for the establishment of a steel mill was first referred to the National Economic Council by resolution of the Cabinet on March 22, 1949. The Honorable, the Secretary of Commerce and Industry, in a memorandum dated February 18, 1949 to His Excellency, the President of the Philippines, strongly recommended the same project. On April 4, 1949, the National Economic Council recommended approval of the project.

It is proposed to set up a steel rolling mill with an initial monthly capacity of 1,500 tons, or 18,000 tons annually. This plant may be later enlarged as to capacity and kind of products with additional equipment and investment. This will manufacture only "merchants" bar, such as flats (⅜" x ⅛" to 2" x ½"), squares (⅜" x 1¼"), and rounds (⅜" to 1½").

The steel rolling mill, and other accessory equipments will be purchased from the United States. Some equipment and electric furnaces allocated to the Philippines as reparations from Japan will also be utilized in the proposed mill.

The principal and almost the only raw materials needed for this initial steel plant are scrap iron and scrap steel, which constitute the cheapest sources presently available in sufficient quantities. The utilization of scrap as raw material is normally practiced by steel mills abroad.

The initial investment of ₱4,500,000 includes complete equipment and machinery, design, installation, and testing buildings, light and water plants, interest during construction, expenses for technical personnel abroad, payments for foreign skilled mill workers under six months' contracts, and contingencies; it does not include the cost of the plant site. A breakdown of the initial investment follows:

(1)	Purchase of equipment and materials abroad	₱3,400,000
(2)	Local labor, materials, and services	1,100,000
	Total investment	₱4,500,000

Of the above amount, ₱40,000 have already been released and spent on the project, leaving only ₱4,600,000 of which ₱3,400,000 will be foreign exchange.

II. ECONOMIC JUSTIFICATION

The O.I.T. allocation to the Philippines of merchants bars for the first quarter of 1949 amounted to 6,450 tons, or 2,150 tons per month. Our 1940 imports of steel bars and rods were 39,435 metric tons, or an average of 3,290 tons monthly. In view of the extensive reconstruction and rehabilitation work now in progress, an estimated consumption of 4,000 tons monthly by the end of this year is deemed conservative. These requirements can easily take care of the small output of the proposed plant.

The present landed cost of imported steel merchant bars is reported at not less than ₱275 per ton. The proposed steel mill will be able to produce at a cost ranging from ₱200 to ₱250 at full production of 18,000 tons annually.

It should be noted that retail prices range from ₱450 to ₱750 per ton so that if the mill output is sold at ₱300 per ton, the expected income of ₱5,400,000 will cover not only all costs of production plus provision for depreciation reserve, but it will also be sufficient to pay normal interest charges on the investment and carry out a balanced mill development program.

III. GENERAL REMARKS

The establishment of the steel mill will be an important step towards our goal of achieving economic self-sufficiency and stability. Many authoritative sources have in the past recommended the advisability of the project. At present, Dr. George Waterhouse, Professor Emeritus of the Massachusetts Institute of Technology, is reviewing all studies on this project. It is expected that a very comprehensive report will be forthcoming from him at an early date.

PULP MILL

I. The Project

The government is presently operating a kraft paper and bagmaking plant at Mandaluyong, Rizal near the Insular Sugar Refining.

It has a capacity of 5,000 tons annually utilizing imported pulp. It is now proposed to establish a pulp mill to produce annually about 3,000 tons of pulp from locally available raw materials. This project will require an estimated outlay of ₱1,200,000, of which ₱500,000 will be foreign exchange.

II. ECONOMIC JUSTIFICATION

In 1940 our imports of paper bags, wrapping paper, newsprint, pasteboard and cardboard sheets amounted to 35,000 metric tons valued at almost ₱6 million. Our imports of the same items in 1948 totalled 46,700 tons valued at ₱24.5 million. This industry therefore deserves encouragement for expansion and for possible participation by private capitalists. The project proposed will provide such encouragement by showing that the local paper industry could be made self-sufficient, independent of the availability and price fluctuations of raw materials abroad. Based on current prices, it is estimated that the pulp mill will save about ₱1.0 milion annually.

AGRICULTURAL IMPLEMENT FACTORY

I. The Project

Under this project the Machinery and Equipment Department of the National Development Company would engage in the manufacture of animal-drawn farm implements, garden tools and certain tillage equipment for tractors, some samples of which have already been made by said Department and are now undergoing field tests. With a total capital outlay of ₱900,000, the Department would reorganize its existing facilities, erect additional buildings and purchase and install much-needed machinery for production in a commercial scale. Until the raw materials, such as iron and steel will be locally produced, it is proposed to import these items from abroad.

The proposed factory will produce annually about 15,600 units of plows, harrows, middle breakers, picks, garden tools, etc. This plant will later go into the fabrication of simple machinery and agricultural processing equipment. It is contemplated to combine with it in the future an assembly for farm tractors.

II. ECONOMIC JUSTIFICATION

While the government is vigorously pursuing a farm mechanization program, the use of work animals in farm operations especially in Luzon will continue largely because the farms are small, making the adoption of mechanical equipment rather costly. The agricultural implement factory proposed will supply partially the local requirements for animal-drawn implements and, thereby, save foreign exchange. With the factory operating at full production, it is estimated that a gross annual income of ₱670,000 (representing about ₱1,000,000 in equivalent imported equipment) will be realized from the sale of its products. Against this income must be charged the production expenses estimated at ₱510,000, of which ₱23,000 represent fixed capital costs; ₱112,000 for materials and supplies; and ₱375,000 for salaries, wages and general administration. The annual surplus of ₱160,000 is 11.4% of the investment.

AMMONIUM SULPHATE FERTILIZER PLANT

I. The Project

The 50,000-metric ton Ammonium Sulfate Fertilizer Plant now being undertaken by the National Power Corporation in connection with the integrated industrial program in the Maria Cristina area is discussed fully in the report to the President of the Technical Committee created under Administrative Order No. 83. The plant is etsimated to cost ₱11,000,000 distributed as follows:

Plant equipment including engineering and purchasing	₱ 7,200,000
Freight and handling	700,000
Building and foundations	500,000
Erection	1,300,000
Miscellaneous	1,200,000
Total estimated capital investment, Ammonium sulfate works	11,000,000
Dollar expenditure	8,000,000
Philippine peso expenditure	3,000,000

Electric power for this plant will be supplied from the 25,000 KW initial installation of the Maria Cristina Falls Hydroelectric Project.

II. ECONOMIC JUSTIFICATION

The economic justification of the combined hydroelectric power and fertilizer project is also contained in the Technical Committee Report referred to above. A summary of the production cost estimate follows:

Fixed capital charges	₱ 850,000
Overall administration and general expenses including insurance	250,000
Raw materials — 12,000. m.t. of sulfur at ₱90/ton	1,080,000
Labor and supervision	303,400
Electric power — 180 million KWH at 4-1/2 mile per KWH	810,000
Water	6,600
Maintenance and repairs	100,000
Plant administration	100,000
Total estimated cost of production (bulk)	₱ 3,500,000
Unit production cost per ton (50,000 m.t., bulk)	70.00
Ammonium sulfate bagging cost per m.t.	6.00
Total estimated production cost (bagged)	3,800,000.00
Unit Production Cost (bagged)	76.00

On the basis of selling the product at ₱160 per metric ton (12% below current wholesale price), the annual net surplus will be ₱4,200,000 or 38.2% of the investment. The direct annual dollar savings in the purchase of fertilizer will amount to $3.3 million computed on the basis of the present United States price F.O.B. of $60 per short ton. The increased rice yield from the use of 50,000 metric tons of the fertilizer to be produced may be conservatively estimated at ₱12 million a year. The availability of excess power, obtained for only one centavo per KWH, will give impetus to the development of other industries in the area. Finally, a modest start will be made in the orderly and coordinated development of the Agus River—Lake Lanao Basin with its rich potentialities opened for further accelerated industrial growth.

III. GENERAL REMARKS

The construction of another 50,000 metric ton unit is being considered although not included in this program. The total capacity of 100,000 m.t. annually for both units represents about 67% of our estimated requirements for this kind of fertilizer by 1954.

SUPERPHOSPHATE PLANT

I. The Project

There is at present a plan for a private firm to set up a superphosphate plant with an estimated capacity of 50,000 short tons annually. The production of superphosphate will, in addition to the ammonium sulfate to be produced at the Maria Cristina project, provide a balanced fertilizer supply for our agriculture. Studies made by the National Development Company showed that this plant will cost about ₱2,630,000 of which ₱760,000 will be in foreign exchange. The estimated operating capital of ₱1,360,000 will have to be provided by arranging credit lines with local banks or by additional investment.

The plant will use imported sulphur and phosphate rock initially until local deposits of these raw materials are found. The Bureau of Mines is presenty undertaking an island-wide survey for these raw materials. Partial results of this survey indicated sizable deposits of high-quality pyrites for the production of sulphur. It is believed that a more exhaustive exploration work would disclose commercial deposits of phosphate rock.

II. ECONOMIC JUSTIFICATION

Even on the basis of importing the raw materials, the production cost will be about ₱67 per metric ton, which is very much less than the present average landed cost of ₱115 per ton. On the basis of full capacity operation, the annual production cost will amount to ₱3,010,000 distributed as follows:

Fixed capital costs	₱ 283,800
Operating cost, including raw materials, salaries and wages, administration, distribution and general expenses	2,726,200
Total estimated production cost	₱3,010,000

The estimated annual income from the sale of 50,000 tons of superphosphate at the low rate of ₱70 per ton is ₱3,500,000, leaving a surplus of ₱490,000 annually.

On the basis of an application of 200 kilos per hectare, the output of the proposed plant will be able to fertilize about 350,000 hectares of rice land. Assuming an average increase yield of three cavans per hectare (experiments undertaken by the Bureau of Plant Industry have shown much better results than this figure) the increase in yield will amount to 1,050,000 cavans of rice with a value of not less than ₱15 million. This means a saving in our rice imports as well as in foreign exchange.

III. GENERAL REMARKS

The importation of raw materials initially for the operation of the proposed plant should not cause doubts as to the practicability and economic feasibility of this project. Countries like Japan, New Zealand, Australia and India have superphosphate plants using imported raw materials and yet find them extremely profitable to operate and even invade the foreign markets. The world shortage in fertilizers will probably continue for a long time to come since the current increase in production is still less than the increase in the demand for them, the latter having been accelerated by proper education and scientific farming methods.

AGRICULTURAL LIME PLANT

I. The Project

Under this project it is proposed to install small grinding and pulverizing units for processing local limestone for agricultural application. Each unit will have a capacity of four metric tons per hour and it is proposed to acquire at least 35 units to be distributed at strategic points all over the archipelago. These will have an aggregate capacity of 260,000 metric tons annually.

Each unit will cost about ₱50,000 so that the capital investment for the 35 units proposed will be ₱1,800 000, of which approximately ₱1,440,000 will be foreign exchange.

II. ECONOMIC JUSTIFICATION

The application of agricultural lime in our farms is not generally practiced as shown by the acidic reaction of almost all the agricultural regions investigated by the Soil Survey Conservation Division of the Bureau of Plant Industry. It is claimed that an application of four to five tons of lime per hectare every three years will improve the physical condition of the soil and will make it more receptive to the beneficial effects of fertilizer applications. For example, the application of lime to highly lime-deficient rice farms shows as 200% increase in yield and when applied together with fertilizers shows from 500 to 900% increase. There are good quality and adequate limestone deposits all over the islands and these resources should be tapped to complement the food production campaign. It is estimated that the Philippines will require by 1954 no less than 5,000,000 metric tons of lime annually. The productive capacity proposed represents only 5% of the above estimated requirements.

The present landed cost of lime is ₱45 per ton. It is estimated that the lime that will be produced by this project will cost about ₱7 per ton and could be sold readily at ₱10 per ton. The estimated annual production expenses will total ₱1,820,000 which should be charged against the estimated annual income of ₱2,600,000. This will leave ₱780,000 surplus annually.

CAUSTIC SODA—CHLORINE PLANT

I. The Project

The plant proposed will have a daily capacity of five (5) tons of caustic soda, using the electrolytic method of manufacture, of which chlorine is a by-product. The capital investment is estimated at ₱1,500,000, of which ₱900,000 represent foreign exchange. The plant will include a hydrochloric acid unit for producing muriatic acid for local consumption.

II. ECONOMIC JUSTIFICATION

The present landed costs of caustic soda and chlorine are ₱335 and ₱193 per ton, respectively. The proposed plant could produce these products at ₱150 per ton for caustic soda and ₱70 per ton for chlorine. Our imports in 1948 of caustic soda amounted to 6,500 tons and of chlorine, 165 tons. The capacity proposed represents less than 25% of the estimated requirements of 8,000 tons annually.

The annual production expenses of this plant will amount to about ₱200,000 divided into: fixed capital costs—₱75,000; materials and supplies—₱90,000; and, salaries and wages—₱25,000. These expenses are to be charged against the estimated income of ₱800,000, leaving a net mated requirements of 8,000 tons annually.

III. GENERAL REMARKS

A private company has recently purchased a one-ton caustic soda-chlorine plant which is an indication that the government may not need to go into this field. It also shows that the engineering and economic feasibility of this industry is established.

SUMMARY OF AVERAGE YEARLY FINANCING PROGRAM FOR VOCATIONAL EDUCATION COVERING FISCAL YEARS 1950 — 1954

1.	For the construction of needed buildings for the fifty-five (55) vocational schools	₱ 920,950.00
2.	For the acquisition of additional instructional equipment, machinery and supplies and classroom furniture for fifty-five (55) vocational schools . . .	1,729,261.12
3.	For salaries and wages of additional teaching positions and other personnel [1]	695,660.00
4.	For the establishment and operation and maintenance of teacher-training departments in agricultural, trade and industrial and business and distributive education [2]	750,000.00
5.	For the operation and maintenance of eight (8) national vocational schools	1,491,000.00
6.	For aid in operation and maintenance of provincial and city vocational schools [3]	2,829,000.00
7.	For the operation and maintenance of the Craftsman Section of the Vocational Education Division.	150,000.00
8.	For the transfer and conversion and operation and maintenance of the Vocational Education of the Bureau of Public Schools into an office of Voca-	

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[1] Only during the first year 1950-1951, on the basis of present enrolment and includes teachers for homemaking and vocational trade for girls in agricultural and trade Schools.

[2] For operation and maintenance of teacher-training departments of the Phil. School of Arts & Trade, Iloilo School of Arts & Trade, The Cebu School of Arts & Trade, and establishment and operation of teacher training departments in Central Luzon Agricultural School of Commerce.

[3] Includes appropriation authorized under Republic Act Nos. 301 & 303.

	tional Education directly under the Department of Education	230,000.00
9.	For the conversion and operation and maintenance thereafter of two (2) provincial vocational schools yearly, one of the Central Luzon Agricultural School type and another one of the Philippine School of Arts and Trade	400,000.00
10.	For the establishment and operation and maintenance of national regional vocational schools of the type of Central Luzon Agricultural School, Philippine School of Arts & Trade and Philippine School of Commerce	800,000.00
11.	For the expenses of technical assistance [4]	98,140.00
	TOTAL	P10,094,011.12

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[4] Covers transportation expenses, clothing allowance and per diem while on tour of duty in the Philippines.

ESTIMATED SCHOOL-AGE POPULATION, BY AGE GROUPS

(Source: Oreta. 1949 Secondary Education for Economic Productivity)

Age Intervals	Grade Level	Population	Percent of total 7-20 yr. old group
7 — 10	Primary (I-IV)	2,113,320	34.1
11 — 12	Intermediate (V-VI)	855,000	13.8
13 — 16	Secondary (1-4)	1,681,680 [1]	27.1
17 — 20	College (1-4)	1,551,400 [1]	25.0
7 — 20	All levels	6,201,400	100.0

[1] Of these (13 years old and older) 853,722 (estimated) are enrolled in the elementary grades. Of the 3,414,880 enrolled in the elementary grades, therefore, in 1947-48; 2,561,168 were 12 years old or younger (3,414,880-853,722). This number subtracted from 2,968,320 (2,113,320 plus 855,000), leaves 407,152 or *15.9%* of the number of children belonging to the primary and intermediate age groups, 7-10 and 11-12, who were not in school in 1947-48. Following a similar reasoning the percentage of secondary school-age youth in school (13-20 years old) may be estimated at ***36.3***. This figure is obtained by dividing the sum of 837,722 (13-20 years old pupils in the elementary grades) and the 1948 enrollment in the public and private secondary schools, 373,307, by the total population belonging to the age group 13-20. Total for ages 7 to 20: ***62.5%***.

Comparable figures in a number of foreign countries, for six to twenty-one year olds in schools, are as follows:

United States	78.5%
Canada	78.5%
Russia	66.3%
Great Britain	64.6%
Germany	59.0%
Japan	52.2%

1947-1948 SCHOOL ENROLLMENTS IN PUBLIC AND PRIVATE SCHOOLS

(Source: Isidro. 1949. Some Problems of Higher Education in the Philippines)

	Elementary		Secondary		Collegiate		Total	
	Enroll-	%	Enroll-	%	Enroll-	%	Enroll-	%
Public Schools								
B. P. S.	3,324,770	97.3	186,271	49.9	2,531	3.0	3,513,462	90.7
U. P.			1,489	.4	3,926	4.7	5,415	.2
Private Schools								
B. P. S.	90,230	2.7	185,547	49.7	77,317	92.3	353,094	9.1
GRAND TOTAL	3,414,890	100	373,307	100	83,774	100	3,871,971	100
Per cent	(88.2)		(9.6)		(2.2)		(100)	

SOURCES: Annual Report of the Secretary of Education, 1947-48; List of secondary schools and corresponding enrolments from the Chief of Instruction Division, Bureau of Public Schools; Data from the Director of the Bureau of Private Schools.

DISTRIBUTION OF PRIVATE COLLEGES AND UNIVERSITIES IN THE PHILIPPINES

(1947-1948)

(Source: Isidro, 1949. Some Problems of Higher Education in the Philippines)

LOCATION	No. of Jr. Colleges	No. of 4-yr Colleges	No. of Uni.	Total
1. Abra	1	—	—	1
2. Agusan	1	—	—	1
3. Albay	3	1	—	4
4. Batangas	6	1	—	7
5. Bohol	4	1	—	5
6. Bulacan	5	2	—	7
7. Cagayan	5	1	—	6
8. Camarines Norte	2	—	—	2
9. Camarines Sur	13	1	—	14
10. Capiz	5	—	—	5
11. Catanduanes	1	—	—	1
12. Cavite	4	1	—	5
13. Cebu	11	4	2	17
14. Cotabato	2	—	—	2
15. Davao	2	1	—	3
16. Ilocos Norte	4	—	—	4
17. Ilocos Sur	3	1	—	4
18. Iloilo	6	5	—	11
19. Isabela	2	—	—	2
20. Laguna	4	2	—	6
21. Lanao	1	—	—	1
22. La Union	4	2	—	6
23. Leyte	7	1	—	8
24. Manila	36	25	9	70
25. Masbate	1	—	—	1
26. Mindoro	2	—	—	2
27. Misamis Occidental	5	1	—	6
28. Misamis Oriental	1	1	—	2
29. Mountain Province	3	—	—	3

30. Negros Occidental	6	—	—	6
31. Negros Oriental	2	1	1	4
32. Nueva Ecija	2	2	—	4
33. Nueva Vizcaya	2	—	—	2
34. Pampanga	7	3	—	10
35. Pangasinan	19	4	—	23
36. Quezon	6	—	—	6
37. Rizal	6	4	—	10
38. Samar	4	—	—	4
39. Sorsogon	1	—	—	1
40. Surigao	2	—	—	2
41. Tarlac	6	1	—	7
42. Zambales	2	—	—	2
43. Zamboanga	7	—	—	7
Total of Private Colleges	216	66	12	294
Total of State Colleges	14	—	1	15
Grand Total	230	66	13	309

NUMBER OF COLLEGES PER 1,000,000 POPULATION IN THE PHILIPPINES AND IN THE DIFFERENT STATES

(Source: Isidro, 1949. Some problems of Higher Education in the Philippines)

State or Country	Population	No. of Schools or Colleges	No. of Schools per million
Philippines	19,000,000	309	16.3
New York	13,469,142	102	7.6
Massachusetts	4,316,721	53	12.3
Ohio	6,907,612	49	7.0
California	6,907,387	81	11.6
Texas	6,000,000	89	14.8

NUMBER OF PROFESSIONALS IN THE PHILIPPINES, 1947

(Source: Isidro, 1949. Some Problems of Higher Education in the Philippines)

Professions	From Government Boards	From the Bureau of the Census
Teachers		(58,934)
Physicians	7,216	3,460
Lawyers	6,675	3,751
Registered Nurses	6,631	3,067
Pharmacists	5,030	1,972
Dentists	3,172	1,520
Civil Engineers	1,822	925
Certified Public Accountants	1,161	339
Surveyors	605	256
Opticians	383	161
Veterinarians	284	137
Architects	281	202
Mining Engineers	269	99
Mechanical Engineers	200	146
Electrical Engineers	177	119
Chemical Engineers	101	64
Total	34,007	16,218

Column 1 indicates the number of professionals in the Philippines registered in the different Government Boards of Examiners from the time each Board was created up to December, 1947.

Column 2 indicates the number of professionals in the Philippines as shown in *Facts and Figures About Economic and Social Conditions of the Philippines, 1946-1947, Bureau of Census and Statistics, Manila: 1948.*

ESTIMATED FOREIGN RECEIPTS AND DISBURSEMENTS
1950 - 1954

PRELIMINARY
(In Million U. S. Dollars)

	1950	1951	1952	1953	1954
RECEIPTS:					
Merchandise Exports [1]	260.5	292.2	284.2	283.0	288.7
Gold [2]	2.0	3.9	4.0	6.5	6.5
U. S. Government Expenditures [3]	200.0	104.0	90.0	90.0	90.0
Invisibles [4]	55.4	52.9	52.9	52.9	52.9
Total	517.9	453.0	431.1	432.4	438.1
PAYMENTS:					
Imports (C. I. F.) [5]	397.7	313.2	336.9	353.0	353.0
Development Program	10.0	63.5	47.1	30.1	13.9
Philippine Government Expenditures [6]	9.4	9.2	8.7	4.0	2.2
Amortization of U. S. RFC Budgetary Loan	——	——	25.0	35.0	——
Invisibles [4]	100.0	90.4	65.4	65.4	65.4
Total	517.1	476.3	483.1	487.5	434.5
SURPLUS OR (DEFICIT)	.8	(23.3)	(52.0)	(55.1)	3.6

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[1] See Schedule 1.

[2] 1951-1954 represents 25 percent of the estimated production for these years as estimated by the Bureau of Mines.

[3] See Schedule 2.

[4] See Schedule 5.

[5] The 1950 estimate was arrived at as follows:

Actual Payments (January — June)	210.2	million
Budget for third quarter	86.3	"
Tentative budget for 4th quarter	101.2	"
Total	$397.7	"

For 1951 - 1954 estimates, see Schedule 3.

[6] See Schedule 4.

[7] Estimated July to December, 1950 requirements.

IMPORTS FOR JANUARY — JUNE, 1950 AS CLASSIFIED UNDER
A. EXECUTIVE ORDER 295 AS AMENDED AND
B. REPUBLIC ACT 246

(CIF Values in Pesos)

	January to June 1950			January to June 1950	
	Value	Percent		Value	Percent
A			**B**		
TOTAL	419,089,561	100.00	TOTAL	419,089,561	100.00
Controlled Commodities	119,507,291	28.52	*Quota Goods (CIF)*	132,799,223	31.69
Capital Goods	2,206,801	.53	Appendix A	18,296,562	4.37
Raw Materials	14,632,716	3.49	Appendix B	22,517,505	5.37
Consumption Goods	102,667,774	24.50	Appendix C	69,304,130	16.54
			Appendix D	22,681,026	5.41
Uncontrolled Commodities	299,582,270	71.48	*Non-Quota Goods*	286,290,338	68.31
Capital Goods	62,837,842	14.99	Machinery & Equipment	54,979,893	13.12
Raw Materials	141,526,672	33.77	Raw Materials	134,367,138	32.06
Consumption Goods	95,217,756	22.72	Consumption Goods	96,943,307	23.13

SCHEDULE I

ESTIMATED MERCHANDISE EXPORTS — 1950 - 1954

(Million Pesos)

ITEM	1950	1951	1952	1953	1954
Pineapple, canned	20.8	22.9	25.2	25.2	25.2
Desiccated coconut	38.9	35.0	31.5	28.4	25.6
Coconut Oil, Inedible	32.3	32.3	29.1	26.2	23.6
Copra	182.2	184.0	154.9	150.7	151.4
Copra meal or cake	6.0	6.0	5.4	4.9	4.4
Sugar and related products	94.4	149.4	158.3	151.1	153.0
Rubber, crude	.7	.7	.7	.7	.7
Leaf Tobacco	1.7	1.6	1.6	1.7	1.7
Abaca unmanufactured	61.7	71.0	81.0	91.6	101.2
Maguey unmanufactured	.4	.4	.4	.4	.4
Cordage (Rope)	3.6	2.3	2.2	2.0	1.5
Embroideries	12.0	12.0	12.0	12.0	12.0
Lumber	5.2	5.7	6.3	6.9	7.6
Rattan Furniture	.9	.9	.9	.9	.9
Metallic Minerals	19.6	24.7	28.4	32.7	37.6
Others	40.6	35.5	30.5	30.5	30.5
TOTAL	₱521.0	₱584.4	₱568.4	₱565.9	₱577.3
	$260.5	$292.2	$284.2	$283.0	$288.7

SCHEDULE 1-A

FACTORS USED IN THE EXPORT ESTIMATES

1950 — 1954

(In Millions of Pesos)

	BASIS						
	Actual Exports						
	1st Five Months	Last Seven Months	Total Estimate for				
	1950	1949	1950	1951	1952	1953	1954
GROUP I							
1. Pineapple, Canned[1]	9.0	11.8	20.8	22.9	25.2	25.2	25.2
2. Desiccated Coconut[2]	17.0	21.9	38.9	35.0	31.5	28.4	25.6
3. Coconut Oil, Inedible[3]	9.9	22.4	32.3	32.3	29.1	26.2	23.6
4. Copra Meal or Cake[3]	2.6	3.4	6.0	6.0	5.4	4.9	4.4
5. Rubber, Crude	.3	.4	.7	.7	.7	.7	.7
6. Maguey, Unmanufactured	.1	.3	.4	.4	.4	.4	.4
7. Cordage (Rope)[4]	1.2	2.4	3.6	2.3	2.2	2.0	1.5
8. Rattan Furniture	.4	.5	.9	.9	.9	.9	.9
9. Metallic Minerals[5]	7.0	12.6	19.6	24.7	28.4	32.7	37.6
10. Lumber[6]	2.4	2.8	5.2	5.7	6.3	6.9	7.6
11. Embroideries	4.8	7.2	12.0	12.0	12.0	12.0	12.0
12. Others[7]	18.6	22.0	40.6	35.5	30.5	30.5	30.5
TOTALS	73.3	107.7	181.0	178.4	172.6	170.8	170.0

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[1] Estimated increases of 10 percent for 1951 and 1952 based on previous export estimates.

[2] Estimated decrease of 10 percent for each year due to expected competition from other sources.

[3] Estimated decrease of 10 percent due to competition from other sources of fats and oils and increase in local consumption.

[4] Decrease due to estimated decline in prices.

[5] Estimated increase of 15 percent in 1952 over 1951 equivalent to percentage increase of estimated exports for 1950 over 1949.

[6] Estimated increase of 10 percent based on average of previous years.

[7] Decrease due to estimated decline in prices.

SCHEDULE I-B

FACTORS USED IN THE EXPORT ESTIMATES

(In Millions of Pesos)

GROUP II	Average Percentage of Exports to Production 1948 and 1949	1950		1951		1952		1953		1954	
		Estimated Production	Estimated Exports	Estimated Production	Estimated Exports	Estimated Production	Estimated Exports	Estimated Production	Estimated Exports	Estimated Production	Estimated Exports
1. Abaca, unmanufactured	82.0 (1)	75.24	61.70	86.53	71.00	98.74	80.97	111.75	91.64	123.37	101.17
2. Sugar and related products	(2)	133.89	94.40	188.79	149.42	195.70	158.32	182.70	151.12	181.70	153.03
3. Leaf Tobacco	6.8 (3)	25.24	1.72	23.14	1.57	23.96	1.63	24.50	1.67	24.66	1.68
4. Copra	70.0 (1)	260.30	182.21	262.89	184.00	221.34	154.94	215.28	150.70	216.36	151.40
TOTAL		494.67	340.03	561.35	405.99	539.74	395.86	534.23	395.13	546.09	407.28

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(1) This is based on estimated production for 1950 - 1954 and the average percentage of exports to production for 1948 and 1949.

(2) From 1951-1954 of the estimated annual production (Schedule 1-d) 200,000 short tons (181,437 m. tons) is reserved for domestic consumption. The estimated yearly exports represent the balance multiplied by the estimated price for each year as per Schedule 1-c.

(3) This relationship from 1946 to 1949 show substantial reductions. The relationship used is that for 1949.

SCHEDULE 1-C. ESTIMATED UNIT PRICES OF PHILIPPINE PRODUCTS

(Pesos per Unit)

PERIOD	Rice		Corn		Sugar		Copra		Coconut oil		Abaca		Tobacco		Ramie	
	44 Kg.	M. ton	56 Kg.	M. ton	63.25 Kg.	M. ton	100 Kg.	M. ton	Kg.	M. ton	63.25 Kg.	M. ton	115 Kg.	M. ton	63.25 Kg.	M ton
1946	21.55	490	23.11	413	79.68	1,260	23.37	234	.57	570	32.72	517	82.50	717		
1947	13.25	301	13.76	246	33.06	523	35.03	350	.80	800	41.00	648	81.71	711		
1948	13.56	308	16.19	289	18.41	291	51.49	515	.98	980	52.97	837	93.88	816	45.00	711
1949	13.04	296	11.26	201	18.86	298	30.99	310	.62	620	53.54	846	91.73	798	45.00	711
1950	10.00	227	9.70	173	13.75	217	37.00	370	.64	640	52.90	836	120.00	1,043		665
1951	8.50	193	8.50	152	13.75	217	37.00	370	.64	640	52.90	836	100.00	870		655
1952	7.50	170	7.30	130	13.00	206	31.00	310	.57	570	49.97	795	90.00	783		645
1953	6.50	148	6.00	107	11.00	174	27.00	300	.54	540	47.44	750	80.00	696		620
1954	5.40	123	5.30	94	10.00	158	27.00	300	.50	500	43.64	690	70.00	609		600

PERIOD	Peanuts		Fruits and nuts	Root Crops	Beans and vegetables	Desiccated coconut	Meat and poultry products	Fish and fish products	Milk and dairy products	Coffee and cacao
	63.25 Kg.	M. ton	M. ton	M. ton	M. ton	M. ton	M. ton	M. ton	M. ton	M. ton
1946	70.50	1,115					3,330			
1947	68.84	772					2,528			
1948	53.29	843					2,231			
1949	39.54	625	265	170	320	704	2,209	1,990	2,200	1,900
1950	33.44	529	245	150	310	920	2,047	1,770	2,000	2,020
1951	27.40	433	215	132	280	840	1,880	1,600	1,800	1,860
1952	22.00	348	185	115	250	765	1,600	1,430	1,600	1,520
1953	19.00	300	165	100	230	690	1,450	1,280	1,400	1,200
1954	17.00	269	150	87	200	600	1,300	1,140	1,200	900

SCHEDULE 1-D. PRINCIPAL AGRICULTURAL CROPS: FOOD CROPS AND TECHNICAL GROUP, ESTIMATED, QUANTITY AND VALUE, 1950-1954

(Quantity in metric tons; Value in pesos)

Crops	1950		1951		1952		1953		1954	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
FOOD CROPS:										
Rice, rough	2,618,200	594,331,400	2,794,600	539,338,500	2,927,700	497,709,000	3,033,700	448,997,600	3,110,900	382,640,700
Corn	576,400	99,717,200	644,700	97,994,400	690,000	89,700,000	713,500	76,344,500	725,900	68,234,600
Fruits and nuts	377,400	92,463,000	384,800	82,753,500	392,600	72,631,000	400,500	66,082,500	408,500	61,276,000
Root crops	556,300	83,445,000	573,000	75,636,000	590.200	67,873,000	607,900	60,790,000	626,100	58,470,700
Beans & vegetables (a)	62,100	19,251,000	64,300	18,004,000	66,000	16,500,000	68,500	15,755,000	70,900	14,180,000
Coffee and cacao	5,000	10,100,000	5,300	9,858,000	6,000	9,120,000	6,500	7,800,000	7,000	6,300,000
Peanuts	10,500	5,554,500	11,000	4,763,000	11,500	4,002,000	12,000	3,600,000	12,000	3,228,000
Sub-total	4,205,900	904,862,100	4,477,700	828,347,400	4,684,000	757,535,000	4,842,600	679,369,600	4,961,300	590,329,000
TECHNICAL GROUP:										
Copra (b)	703,500	260,295,000	710,500	262,885,000	714,000	221,340,000	717,600	215,280,000	721,200	216,360,000
Coconut oil (Home-made)	3,300	2,112,000	3,500	2,240,000	3,600	2,052,000	3,700	1,998,000	3,900	1,950,000
Desiccated coconut	60,000	55,200,000	61,500	51,660,000	63,000	48,195,000	64,000	44,160,000	65,000	39,000,000
Sugar	617,000	133,889,000	870,000	188,790,000	950,000	195,700,000	1,050,000	182,700,000	1,150,000	181,700,000
Abaca	90,000	75,240,000	103,500	86,526,500	124,200	98,739,000	149,000	111,750,000	178,600	123,372,400
Tobacco	24,200	25,240,600	26,600	23,142,000	30,600	23,959,800	35,200	24,499,200	40,600	24,664,500
Ramie	800	532,000	1,600	1,048,000	2,500	1,612,500	3,400	2,108,000	4,400	2,640,000
Sub-total	1,498,800	552,508,600	1,777,200	616,291,500	1,887,900	591,598,300	2,022,900	582,495,200	2,163,800	589,686,900
TOTAL	5,704,700	1,457,370,700	6,254,900	1,444,638,900	6,571,900	1,349,133,300	6,865,500	1,261,864,800	7,125,100	1,180,015,900

(a) Excludes vegetables from tree crops, vine crops and other green vegetables.

(b) Copra production may be increased to 900,000 tons or more a year from 1950 to 1954 if the demand for it increases in the foreign markets at prices similar to that of 1947 and if the peace and order situation will improve.

SOURCE: National Economic Council.

SCHEDULE 2

ESTIMATED UNITED STATES GOVERNMENT EXPENDITURES 1950 TO 1954

(In Million U. S. Dollars)

	1950[1]	1951[1]	1952	1953	1954
War Damage	150	—	—	—	—
Veterans Administration .	70	70	70	70	70
Military	24	24	20	20	20
Others	15	10	—	—	—
TOTAL	259	104	90	90	90

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[1] 1950 and 1951 data — American Embassy estimates. Receipts experienced for past years invariably show these estimates to be higher than actual receipts. During 1950 for instance receipts will probably be at variance with the total estimate by $29 million even after deducting the estimated amount ($30 million) of treasury warrants that find their way to the blackmarket and do not pass through the banking system.

SCHEDULE 3

ESTIMATED IMPORTS 1951 — 1954

		1951		1952		1953 — 1954	
Quota Goods:							
Appendix A —							
Prime Commodities	[1]	$17,566,359		$14,053,087		$14,053,087	
Appendix B —							
Essential Commodities	[2]	22,472,460		22,472,460		22,472,460	
Appendix C —							
Non-Essential Commodities	[3]	32,201,225		32,201,225		32,201,225	
Appendix D —							
Luxury Commodities	[3]	5,776,466	$ 78,016,510	5,776,466	$ 74,503,238	5,776,466	$ 74,503,238
Non-Quota Goods:							
Machinery	[4]	$37,164,708		$37,164,708		$37,164,708	
Raw Materials	[5]	73,795,572		89,063,400		89,063,400	
Consumption Goods	[6]	76,216,594	187,176,874	76,216,594	202,444,702	92,351,440	218,579,548
Ex-Quota Goods	[7]		48,000,000		60,000,000		60,000,000
Total Estimated Imports			$313,193,384		$336,947,940		$353,082,786

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[1] 1951, based on allowable imports using minimum percentage cuts provided in Republic Act 426. Actual imports for the first half of 1950 converted to an annual basis amounts to $18,296,562.

1952-1954, allowable imports using medium percentage cuts provided in Republic Act 426.

[2] Based on allowable imports using medium percentage cuts provided in Republic Act 426. Actual imports for the first half of 1950 converted to an annual basis amounts to $22,517,505.

[3] Based on allowable imports using maximum percentage cuts provided in Republic Act 426.

[4] Allowing 4, 5, 6, and 7 percent per month for different categories of 1948 imports. These are the present amounts allowed.

[5] 1951 — Allowing 3, 4, 5 and 6 percent per month of 1948 imports.

1952-1954 — Allowing 4, 5, 6 and 7 percent per month of 1948 imports.

[6] 1951 and 1952, allowing 3, 4, 5 and 6 percent per month of 1948 imports.

1953 and 1954, allowing 4, 5, 6 and 7 percent per month of 1948 imports.

[7] 1951 - Allowing $4 million per month.

1952-1954 — Allowing $5 million per month.

SCHEDULE 4
DOLLAR REQUIREMENTS
PUBLIC DEBT AND OTHER GOVERNMENT EXPENDITURES[1]

	1949	1950	1951	1952	1953	1954
I. PUBLIC DEBT SERVICING:						
Interest on pre-1934 bonded debt	1,097,212.50	1,096,150.00	1,041,790.00	994,515.00		
Interest on $25,000,000 budgetary loan due January 1, 1952 at 2%	500,000.00	500,000.00	500,000.00	250,000.00		
Interest on $35,000,000 budgetary loan due July 1, 1953 at 2%	700,000.00	700,000.00	700,000.00	700,000.00	350,000.00	
Payments to Secretary of US Treasury for redemption of pre-1934 bonds Sinking Fund annuity required by Philippine Laws..	1,095,589.37	1,093,942.80	1,040,671.64	1,040,671.64		
Additional sinking fund amortization required due to acceleration of redemption of pre-1934 bonds to 1952	1,704,410.63	606,057.20	1,959,328.36	2,015,814.36		
Repayment of $25,000,000 budgetary loan due January 1, 1952 and $30,000,000 due on July 1, 1953	- -	- -	- -	25,000,000.00	35,000,000.00	
II. GOVERNMENTAL OPERATIONS ABROAD:						
Expenses for operation and maintenance of foreign service establishment (net)	1,797,855.00	2,055,680.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00
Estimated annual disbursements of Fiscal Agent, New York, for account of governmental bureaus and offices (for allotments, pensionado expenses, government purchase of equipment and supplies, payments to American pensioners and gratuities, etc.)	2,500,000.00	2,000,000.00	1,800,000.00	1,500,000.00	1,500,000.00	
Total	9,395,067.50	8,051,830.00	9,241,790.00	33,701,001.00	39,050,000.00	2,200,000.00

Note: [1] Not included in the above figures are the following dollar commitments:

1. Redemption of 5% gold bonds due July 1, 1958 (Manila Railroad Refunding Mortgage 5% gold bonds)	13,236,000.00
2. Interest in arrears on above bonds to January 1, 1949	4,963,500.00
3. Redemption of First Mortgage Southern Lines 4% gold bonds due May 1, 1959 (Manila Railroad First Mortgage Southern Lines 4% gold bonds)	1,388,000.00

SCHEDULE 5

INVISIBLE RECEIPTS[1] AND PAYMENTS
1950 — 1954

(Million U. S. Dollars)

	Actual Receipts for the First 6 Months of 1950	Two Times Estimated Budget 3rd Quarter	Total 1950	1951	1952	1951	1954
RECEIPTS							
Services	2.9	3.0	5.9	5.9	5.9	5.9	5.9
Tourism and Personal Expenses of Transients	.5	.4	.9	.9	.9	.9	.9
Other Foreign Government Expenditures	.7	.6	1.3	1.3	1.3	1.3	1.3
Inward Investment Remittances	3.6	3.8	7.4	7.4	7.4	7.4	7.4
Donations and Contributions	11.8	13.0	24.8	24.8	24.8	24.8	24.8
Miscellaneous	8.5	6.6	15.1	12.6[2]	12.6[2]	12.6[2]	12.6[2]
Total	28.0	27.4	55.4	52.9	52.9	52.9	52.9
PAYMENTS:							
Services	6.6	6.6	13.2	10.8	10.8	10.8	10.8
Travel, Education, Subsistence and similar Expenses Abroad	6.7	6.6	13.3	12.0	12.0	12.0	12.0
Remittances for Earnings, Profits, Interests, Dividends, etc.	5.2	13.4	18.6	27.0	27.0	27.0	27.0
Donations and Contributions	2.3	2.6	4.9	.6	.6	.6	.6
Miscellaneous Purposes	8.9	12.8	21.7	15.0	15.0	15.0	15.0
Backlog and Contingencies	—	28.3	28.3	25.0	—	—	—
Total	29.7	70.3	100.0	90.4	65.4	65.4	65.4

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[1] Other than U. S. Government Disbursements.

[2] Exclusive of $2.5 million loan from the Bank of America. This loan was paid in July, 1950.

PART I

THE AGRICULTURAL DEVELOPMENT PROGRAM

I. HIGHLIGHTS OF THE AGRICULTURAL PROGRAM

A. GOALS

1. *General objectives*—In a nutshell the primary objective of the five-year agricultural program is, firstly, to increase by all available means the production of food crops, principally rice and corn, livestock and fish in order to meet as closely as possible the domestic consumption requirement for these products and thereby save dollars through reduced importation of food commodities; and secondly, to rehabilitate and stabilize the production of technical or export crops led by sugar, coconut and abaca, so as to insure and as much as possible increase the flow of dollars to the Philippines via stable exports.

2. *Food crops*—For the principal food crops led by rice and including corn, tubers, fruits, vegetables, coffee, cacao, and peanuts, the overall production target for 1954 is 4,961,300 M.T. or an increase of almost 29% over the 1940 production and 27% over that of 1949. The 1954 production will be about 95% of total domestic requirements amounting to 5,212,500 M.T. computed on the basis of the 1940 per capita consumption.

Of the total food crop production, rice will account for 70,702,000 cavans (3,110,900 M.T.) in 1954, or 32% more than the prewar production and will represent almost 101% of domestic consumption requirements of 69,863,600 cavans (3,074,000 M.T.) for the corresponding year. The production requirement ratio was 89% in 1949 and almost 98% in 1940.

The production targets for the different food crops compared to that of 1949 are as follows:

Rice (rough)—70,702,000 cavans or an increase of 15.6 per cent.

Corn—12,735,100 cavans (shelled), or an increase of 36 per cent.

Fruits and Nuts—408,500 metric tons, or an increase of 51.4 per cent.

Root crops—626,100 metric tons, or an increase of 18.5 per cent.

Beans and vegetables—70,900 metric tons, or an increase of 18.8 per cent.

Coffee and cacao—7,000 metric tons, or an increase of 57 per cent.

Peanut—12,000 metric tons, or an increase of 25.4 per cent.

3. *Technical crops*—In 1940 the aggregate area planted to the principal export crops — coconut, sugar cane, abaca, tobacco — was 1,630,760 hectares and total production almost 2 million metric tons. The corresponding figures for 1949 are 1,416,370 hectares (87%) and 1,549,250 M.T. (79%) respectively. The program from 1950 to 1954 aims at increased production to reach at least the prewar level of exports, if not actually exceed them. Naturally, the trend of development of the agricultural export industries will be much influenced by the market demand for the products in the consuming markets and the prices offered for them.

The present areas planted to coconut will be improved in productive efficiency and emphasis will be made toward improving the quality of Philippine copra. Its production potential for copra and desiccated coconut can be stretched much higher than its actual performance before the war if prices for these products would be favorable.

Abaca is expected to be fully rehabilitated by 1954 when the damaged or destroyed areas shall have been renovated or replaced by new areas and production shall have reached 178,800 metric tons, a few thousand tons over that of 1940. The control of mosaic disease will be given special attention.

Sugar production is expected to reach the prewar level by 1953 so that beginning that year the Philippines will be exporting its full quota to the United States.

Tobacco production may reach the prewar volume of 642,300 quintals (32,115 M.T.) by 1953, provided the market for tobacco, and tobacco products brighten during the period of development. There will be material increases in the production of aromatic leaf tobacco for cigarette manufacture to reduce cigarette importation and of wrapper leaf tobacco needed in quality cigar manufacture.

Ramie, a relatively new prospect among the agricultural export industries, may receive a tremendous boost if the market for ramie fiber could be assured.

The 1954 production goals for the individual crops compared to that of 1949 are as follows:

Copra—721,200 metric tons, or an increase of 3.3 per cent.

Desiccated coconut—65,000 metric tons, or an increase of 10.6 per cent.

Sugar—18,181,800 piculs, or an increase of 66 per cent.

Abaca—2,826,900 piculs, or an increase of 140 per cent.

Tobacco—810,000 quintals, or an increase of 84.8 per cent.

4. *Livestock development*—The prewar population of big animals, including carabaos, cattle, horse, swine, goat and sheep will be reached between 1953 and 1954; that of poultry a little earlier. However, the cattle population by 1954, taken singly, will still be 25% less than the prewar population.

Local meat and poultry production will reach the 1940 level about 1952 and will continue to increase in direct proportion to the growth of the livestock population. In 1954 meat and poultry production will amount to 279,308 metric tons which will be equivalent to 89.7 per cent of total domestic requirement for this product on the basis of the 1940 per capita consumption. Satisfactory solutions to the problem of feed and pasture will have to be found if the production goals are to be reached.

The 1954 target for individual livestock and poultry population is as follows:

Carabaos—3,386,100 head, or an increase of 97 per cent over the actual number in 1948.

Cattle—1,057,200 head, or an increase of 72.4 per cent over the actual number in 1948.

Horses—324,730 head, or an increase of 77 per cent over the actual number in 1948.

Hogs—5,687,700 head, or an increase of 116 per cent over that of 1948.

Goats—492,490 head, or an increase of 77 per cent over that of 1948.

Sheep—36,880 head, or an increase of 42 per cent over that of 1948.

Chickens—34,844,400 head, or an increase of 131 per cent over the actual number in 1948.

5. *Fish production*—The prewar fish production of 170,000 M.T. was already exceeded in 1947. In 1954 production will amount to 321,811

M.T. or about 90 per cent greater than the prewar production. This will mean more fish in the Filipino's diet which is largely deficient in animal proteins.

6. *Lumber production*—The prewar lumber and timber production of 898 million board feet was already exceeded in 1948. Lumber production could be increased in five years to as high as 100 per cent of the prewar output if lumber exports would pick up and domestic demand for construction purposes increase accordingly. Based on present trends production may reach 1,210 million board feet by 1954, of which 140 million board feet will be for export and 1,070 million board feet for domestic consumption.

B. IMPLEMENTATION OF THE AGRICULTURAL PROGRAM

1. *Expansion of cultivated area*—This measure is considered the shortest cut to the attainment of increased production of food crops, particularly, rice and corn. Through the use of mechanized equipment and methods in opening up and cultivating new areas to rice and corn, the normal rate of expansion resulting from the pressure of population increase is to be accelerated.

Increased plantings of other food crops such as fruits, tubers, vegetables and beverage crops will be attained as part of the results of an intensified food production campaign.

The 1954 target for area planted to individual crops is as follows:

Food Crops:

Rice—2,380,000 hectares, or an increase of 10 per cent over that of 1949.

Corn—1,018,900 hectares, or an increase of 11.8 per cent over that of 1949.

Fruits and Nuts—215,000 hectares, or an increase of 5.9 per cent over that of 1949.

Root crops—180,000 hectares, or an increase of 4.4 per cent over that of 1949.

Beans and vegetables—56,000 hectares, or an increase of 14.6 per cent over that of 1949.

Coffee and cacao—56,000 hectares, or an increase of 6.4 per cent over that of 1949.

Peanuts—21,500 hectares, or an increase of 15.6 per cent over that of 1949.

Technical Crops:

Coconut—967,000 hectares, or an increase of 1.6 er cent over that of 1949.

Sugar cane—230,000 hectares, or an increase of 78.3 per cent over that of 1949.

Abaca—305,000 hectares, or an increase of 7.9 per cent over that of 1949.

Tobacco—60,000 hectares, or an increase of 54.9 per cent over that of 1949.

2. *Improvement of Production Efficiency*—Increased agricultural production, both of food crops and of technical crops is to be attained by measures that will raise the rate of yield per unit area and thereby improve the efficiency of farms. These measures include the following:

a. Expansion of area served by irrigation through the improvement of existing irrigation systems, construction of new systems and as an immediate measure, installation of irrigation pumps.

b. Replacement of inferior varieties with superior ones, particularly in the case of rice and corn. The effect of this measure is immediate to the extent it is carried out; its implementation is of long duration.

c. Extensive use of commercial fertilizers and/or adoption of crop rotation and green manuring practices, the effect of which is also immediate, although their implementation will mark time as success of the measure depends upon the proper education of the people.

Establishment of a local fertilizer factory is a corollary to this measure.

d. Effective control of pests and diseases. This is a perpetual measure in the sense that pests and diseases which cause damage to cultivated crops are seasonal and ever present and the fight against them must be waged constantly to minimize destruction. Special attention will be given to the fight against locust, army worms and other pests that wreak havoc on rice and vegetables, the cadang-cadang and bud rot diseases that threaten to wipe out the coconut industry, and the mosaic disease of abaca which threatens the ruin of the abaca industry.

e. Replacement of marginal and submarginal areas. This will be a gradual process, the effect of which will be to increase overall production without necessarily increasing the area under cultivation. Marginal and submarginal areas are actually economic liabilities which contribute to the perpetuation of conditions of poverty in many agricultural areas. This measure is especially urgent in the case of sugar cane and abaca.

f. Renovation of damaged plantations, specifically abaca plantations in Mindanao, the Bicol region and Leyte and Samar now found in varying degrees of deterioration and neglect.

g. Improvement in the quality of products, particularly copra through the use of modern copra driers, and abaca through the adoption of more efficient stripping machinery and methods.

h. Industrialization for increased utilization both of the principal and by-products of coconut, abaca and sugar.

3. *Improvement and development of the livestock industry*—Superior breeds of animals will be imported for breeding purposes, and upgrading and selection of native stock intensified to improve the quality of animal raised locally. Scientific methods of feeding, pasture management and effective control of animal diseases will be adopted. Increased production of livestock feed will be given priority.

4. *Increasing fishery production*—Measures to be taken include: (a) enforcement of conservation measures in fishing; (b) adoption of modern equipment and apparatus for catching fish and scientific method of fish culture and preservation; (c) development of new fishing areas; and (d) stocking of lakes and streams.

5. *Development of industries based on forest products.*—Modern equipment and methods of production will be adopted and essential government projects such as forest inventory, land classification, reforestation and afforestation and forest products utilization will be intensified.

6. *Improvement of the public services* for the promotion of agricultural production and agricultural development is the first imperative. This calls for the reorganization of the Department of Agriculture and Natural Resources, in which immediate attention will be directed along the following lines:

a. Creation of a Bureau of Agricultural Extension under the Department of Agriculture and Natural Resources. All the extension activities now being undertaken by different bureaus or agencies should be consolidated and coordinated under the said Bureau to the end that the vital problems of promoting better farm practices, improving the level of understanding and the standards of living in the rural areas, and overcoming the handicaps of deeply-rooted deficiencies in the socio-economic structure of the rural communities may be solved in a systematic and effective manner.

b. Establishment of an Office of Research Coordination in the Department of Agriculture and Natural Resources under which the agricultural research work of the various bureaus and agencies should be coordinated and strengthened for the solution of the varied problems of technical agriculture. The agricultural experiment station in the College of Agriculture at Los Baños should be continued and maintained as an independent agency under the Board of Regents of the University of the Philipines and should be provided with the necessary and adequate funds.

c. Coordination and strengthening of the government agencies and entities engaged in the marketing and distribution of agricultural products with a view to improving the services in the marketing of agricultural products and by-products and enabling the farmers to obtain a higher income from their produce. The merchandizing functions and activities of the various government corporations should be coordinated under the control and supervision of the Department of Agriculture and Natural Resources.

d. Provisions for an adequate system of agricultural credit with a view to solving the problems of financing which confront especially the small farmers who need from time to time modest amounts of crop loans and other agricultural credits with which to carry on their farm operation and marketing activities. The Rehabilitation Finance Corporation should extend its operations in providing long-term agricultural credit in the principal producing areas by the opening of additional branches and agencies. The Philippine National Bank should enlarge the scope of its short-term credit (crop loans) to small farmers and loans to agricultural cooperatives by the establishment of additional branches, paralleling those established by the Rehabilitation Finance Corporation.

7. *Administrative Organization*—The follow-up and implementation of the agricultural development program will be done through three principal agencies of the government, namely, the Department of Agriculture and Natural Resources and its bureaus and agencies, the National Economic Council, and the government financial institutions. The following steps may be indicated:

a. Priorities of and allocations for the various agricultural projects will be recommended by the National Economic Council to the President whose approval will be final.

b. On the basis of the allocations, the justification for the particular projects, including detailed studies thereof, will be prepared by the private enterprise concerned or by the public agency undertaking a development project and submitted to the National Economic Council for approval. The National Economic Council will in turn recommend the projects for approval or disapproval of the President.

c. Release of funds for approved government projects will be made direct to them or through the Rehabilitation Finance Corporation. For projects under individual private enterprise, release will be made through the Rehabilitation Finance Corporation and the Philippine National Bank.

For government projects, the following agencies will be involved:

a. Bureau of Plant Industry—seedling banks for abaca, ramie and jute (saluyot) and seed propagation stations for the various field crops and fruit trees.

b. Bureau of Animal Industry—Importation and distribution of improved breeds of livestock and poultry, breeding stations and livestock farms.

c. Bureau of Fisheries—breeding stations, distribution of fish fry, developing uses of fish by-products.

d. Fertilizer Administration—importation and distribution of fertilizers.

e. Irrigation Administration—purchase, installation and servicing of irrigation pumps.

f. Government-owned corporations (to devote more attention to their service functions and to be dissuaded or prohibited from undertaking commercial activities and development projects):

(1) National Coconut Corporation (NACOCO)
(2) National Abaca and Other Fibers Corporation (NAFCO)
(3) National Tobacco Corporation (NATOCO)
(4) Philippine Relief and Trade Rehabilitation Administration (PRATRA)
(5) National Rice and Corn Corporation (NARIC)

For private projects, long-term capital loans will be made available through a government development agency[1] and/or the Rehabilitation Finance Corporation and short-term operating loans through the Philippine National Bank.

The follow-up of the loans granted and the adherence by the loan recipients and the government agencies concerned to the priorities and policies laid down by the National Economic Council will be the responsibility of the Secretary of Agriculture and Natural Resources, who will act through the bureaus and agencies under his department. For the over-all coordination of promotional and educational work among the farmers in the rural communities, two agencies of that Department will have to be expanded and strengthened:

(a) Agricultural extension service

(b) Agricultural research

The extension service will also assist the Rehabilitation Finance Corporation and the Philippine National Bank in following up the activities of the rank and file of individual producers and enterprises for which loans have been made for the over-all devevlopment of agriculture and specifically for the attainment of the objectives of the short-term development program.

8. *Utilization of the services of foreign experts and training Filipino technicians abroad*—Technical assistance from foreign experts is intended to fill the deficiency and shortcoming of available local technical skill and knowledge both in methods of agricultural research, education and actual development work.

The training of Filipinos abroad in different lines of agriculture is intended to help elevate the standard of Filipino technicians to modern levels so that in time, the progress of agricultural science and development in this country may be accelerated without foreign assistance.

C. FINANCIAL REQUIREMENTS

1. *Outlay for development of agricultural industries* — This portion of the financial requirement totals ₱401.5 million of which dollar expenditures add up to $82.9 million and peso expenditures ₱235.5 million. It represents the minimum level of needed investment, public and private, in the field of actual development for the attainment of the goals of production set forth in this program for the various agricultural indus-

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[1] A good example is the work being done by the National Development Company for the Capiz fishponds.

tries, including all the primary food crops, major technical crops, livestock, fishery and forestry. It includes both capital investment and operation expenses necessary for development work, such as opening up new areas, replacement of unproductive areas, cultivation of damaged plantations, and improvement of the productive capacity of Philippine farms through the establishment of more irrigation systems, adoption of improved techniques of production, use of fertilizers, modern machinery and equipment and allied measures.

2. *Outlay for essential government service in agriculture* — This portion of the financial requirement totals ₱150.1 million of which dollar expenditures add up to $6.3 million and peso expenditure ₱137.5 million. It represents needed government appropriations for the establishment and operation of needed agencies or increasing the personnel, providing adequate facilities, and expanding the services of already established government agencies directly engaged in promotional, research or regulatory work in agriculture which are indispensable to the development of the various industries.

3. *Outlay for experts and trainees* — This part of the financial requirement totals about ₱2.7 million, of which dollar expenditures add up to $970,000 and peso expenditures ₱785,000. It represents needed government appropriations for securing the services in the Philippines of at least eleven agricultural experts from abroad and sending to the United States at least 30 Filipino trainees in various fields of specialty every year for five years.

4. *Total financial requirement* — Estimated total financial requirement of the five-year agricultural program amounts to almost ₱554.3 million of which dollar expenditures add up to $90.2 million and peso expenditures ₱373.8 million.

II. THE AGRICULTURAL PROGRAM

A. APPRAISAL OF THE AGRICULTURAL SITUATION

1. *Position of Agriculture in Philippine Economy.* — Agriculture has been and will continue to be for a long time the basic industry of the Philippines. The story of this country's economic progress is in large measure the story of her agricultural progress. About 30% of her cultivated area is under technical and export crops, of which the most important are coconut, sugar and abaca, and approximately 70% under food crops of which rice covers about 43 percent. Agricultural income in 1948, amounting to ₱2,272 million exclusive of fisheries and forestry constituted 56% of the total national income. Income from fisheries for the same period was

6% and that from forestry 2.5% of the national income. The bulk of Philippine export consists of agricultural products representing 85% of her total exports. Out of the total labor of 7,347,000[1] engaged in various occupations constituting 38.2% of the Philippine population of 19,200,000, approximately 5,100,000, or 70% of the total labor force and 26% of the entire population are directly engaged in agriculture.

2. *Effects of the Last War on Local Agriculture.* — A survey made jointly soon after liberation by the UNRRA Philippine Mission and the Department of Agriculture and Natural Resources (then Department of Agriculture and Commerce) revealed among other things that (1) Philippine farms lost 25% to 30% of their implements; (2) the source of power for farm operation was reduced more than 40% with the loss of 44% of the carabao population; (3) livestock population including cattle, horses, hogs and poultry was reduced by 60% to 70%; (4) irrigation facilities were either destroyed or found in varying degrees of disrepair; (5) warehouses and processing establishments were either completely wrecked or damaged; (6) transport facilities were reduced to almost nil; (7) large portions of cultivate areas were destroyed, neglected or abandoned due to many causes beyond control; (8) the battle against hunger forced the conversion of large areas traditionally planted to technical crops, such as abaca, sugar cane, tobacco, and to a lesser degree, coconut into fields for the production of food crops, principally rice, corn and vegetables; other dislocations in the farming areas took place, in every case contributing to a reduction of the agricultural productive capacity and actual output. None of these various problems of production caused by extensive war damage to the agricultural industry and by the economic and social dislocation in certain farming areas has completely been solved or eliminated up to this date. A significant decline in rates of yield per unit area obviously due to inadequate means of production available has also been noticeable since 1946, the year immediately following liberation.

3. *Domestic Requirements in Agricultural Food Products*

Per capita consumption — Quantitatively the food intake per caput in 1940 which was a normal year amounted to 303 Kg. This level of consumption is about the same as that in Indonesia; it is however, lower than the per capita intake in Japan and China. About 45% of the per capita food intake is provided by cereals—

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[1] Includes both male and female 10 years old and over (based on 1939 Census, Bureau of the Census and Statistics).

rice, corn, and wheat. Tubers or root crops provide 13%; fish and animal food products including poultry and eggs, 10%; and fruits and vegetables, 7%; and others, 25%.

Qualitatively or from the nutritional standpoint, the average Filipino diet is somewhat deficient in fruits and vegetables and far from satisfactory in milk and dairy products, fish and meat which are the principal sources of animal protein. It is heavily weighted with starchy foods.

The per capita consumption per year of the principal foodstuffs may be summarized as follows:

ESTIMATED PER CAPITA CONSUMPTION OF FOODSTUFFS IN THE PHILIPPINES IN 1940

Foodstuffs	Amount (Kgm.)	Per Cent
Rice (milled)	93.0	30.9
Corn	34.5	11.5
Other Cereals	6.4	2.1
Root Crops	39.5	12.5
Fish and Fish Products	11.3	3.8
Meat and Poultry Products	14.8	4.9
Milk and Dairy Products	4.8	1.6
Vegetables	4.9	1.6
Fruits	15.4	5.1
Coffee and Cacao	0.7	0.2
Peanut	0.2	0.1
Sugar	12.2	4.0
All Others	65.3	21.7
Total	303.0	100.0

Ratio of Domestic Production to Requirements — In 1940, total production of principal food products in the Philippines amounted to 5.3 million M.T. which, balanced against the corresponding total consumption requirements of almost 4.8 million M.T. for the same period, gave a ratio of 110 per cent which may be termed the ratio of sufficiency in production. The production figure cited, however, was heavily "sugared" as it included the entire sugar production of which only about 20 per cent was used for local consumption, the rest being exported. The ratio of Philippine sugar production to domestic consumption was almost 500 per cent.

Excluding sugar, the ratio of production to consumption would only be 93 per cent in 1940. In the principal cereal foods, excluding wheat which was 100 per cent imported, the Philippines was almost wholly self-sufficient with a 98 per cent ratio of production to consumption in rice and 100 per cent in corn. Fish production was 91 per cent of requirement; meat and poultry, 97 per cent; fruits and nuts, 100 per cent; and tubers, 98 per cent. The major deficiencies were in milk and dairy products (11.6 per cent sufficient), coffee and cacao (31.6 per cent) and beans and vegetables 52.0 per cent.

In 1949, more than three years after the liberation, total food production was less than 5 million tons[1] or 89 per cent of total consumption requirement computed on the basis of the actual population for that year and the 1940 (normal) level of per capita intake. While rice production in 1949 already surpassed that of 1940, yet its ratio to consumption requirement was only 89 per cent or 9 per cent lower than that for the earlier period. The overall ratio of food production to requirement in 1949, excluding sugar, was 80 per cent and including sugar, 89 per cent.

In the case of vegetables and fruits, quantity of production and ratio of production to requirement was already slightly higher in 1949 than in 1940 but slightly lower than requirements. In the case of fruits, production in 1949 was 91 per cent of requirement. In the case of corn, root crops, meat and poultry products, milk and dairy products, the 1949 production was 80 per cent, 70 per cent, 60 per cent and 6 per cent of consumption requirement, respectively.

It is very unlikely that the ratio of self-sufficiency in 1940 will be attained in the next five years although gradual imrovement especially, in the basic food items, is certain. By 1954 at best, production of every agricultural food items shall have exceeded in volume the 1940 level. Aggregate production would be 6.8 million M.T. which, when compared with requirements, would show 111 per cent of self-sufficiency. Domestic requirements shall have increased to 6.1 million M.T. because of population growth. Balanced against total domestic consumption requirements then, the ratio of overall production of agricultural food products to overall domestic requirements based on the 1940 per capita intake shall have reached 111 per cent including sugar.

4. *Post-liberation Progress in Agricultural Production* — Agricultural production both for domestic consumption and for export has made substantial progress since the liberation, despite the many difficulties in the way, most of which have been only partially overcome.

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[1] Including sugar.

(a) *Crop production.* From the low level of 3 million M.T. in 1946 which represented 51.4 per cent of the pre-war 1940 production, crop prouction has increased to 5.4 million M.T. in 1949 or an increase of 81.5% in the last three years. The total 1949 crop production was 93.2 per cent of the 1940 prewar production and represented an increase of 9 per cent from the production of the preceding year (1948). The following table indicates the progress made in total agricultural production:

PROGRESS IN CROP PRODUCTION

YEAR	VOLUME (M. T.)	PERCENT OF 1940
1940	5,842,143	100.0
1946	3,000,300	51.4
1947	4,671,760	80.0
1948	5,013,480	85.8
1949	5,446,310	93.2

(1) *Food crops.* Understandably enough, the production of foodstuffs principally rice, corn and vegetables, which received preferential attention in the people's desperate fight against food shortage accounted for much of the increase obtained in agricultural production. Total food crop production increased from 2.7 million M.T. in 1946 representing 69.7% of the prewar (1940) production to 3.9 million M.T. in 1949 or an increase of 45 per cent in the last three years. The 1948 food crop production was almost 1% higher than the prewar (1940) production. Palay production in 1949 was 2,491,300 M.T. which already exceed the highest record of prewar production for any one year, and represented an increase of 54 per cent over the 1946 production. Corn production in 1949 was 534,070 M.T. representing 93 per cent of the 1940 production.

The following table indicates the progress in food crops production:

PROGRESS IN THE PRODUCTION OF FOOD CROPS

YEAR	VOLUME (M. T.)	PERCENT OF 1940
1940	3,857,777	100.0
1946	2,689,100	69.7
1947	3,441,650	89.2
1948	3,569,510	92.5
1949	3,897,060	101.0

(2) *Export Crops.* In 1946, production of export crops led by coconut, sugar cane, and abaca, was barely 16 per cent of the 1940 production. In 1949, the corresponding production reached to 1,549,250 M.T. representing 79 per cent of prewar production and an increase of 398 per cent over that of 1946. This substantial improvement in the position of export crops was due largely to the steady recovery of the sugar industry and the unprecedented production of copra owing to its high price.

The following table indicates the progress in export crop production:

PROGRESS IN EXPORT CROP PRODUCTION

YEAR	VOLUME (M. T.)	PERCENT OF 1940
1940	1,984,366	100.0
1946	311,200	15.7
1947	1,230,110	62.0
1948	1,443,970	72.8
1949	1,549,250	79.0

b. *Livestock and poultry.* The rehabilitation of the livestock industry has been steady even if not unusual. The high cost of feeds has been a major problem in livestock multiplication.

(1) *Big animal population.* In 1946 the number of big animals—carabaos, cattle, horses, swines, sheep and goats—was barely 38 per cent of the prewar (1940) livestock population. In 1949 the number had increased to 6,476,810 heads representing 67 per cent of the prewar number and an increase of 80 per cent over that of 1946.

The following table indicates the growth of the livestock population:

INCREASE IN LIVESTOCK POPULATION

YEAR	NO. OF HEADS	PERCENT OF 1940
1940	9,661,950	100.0
1946	3,646,200	37.7
1947	4,131,790	42.8
1948	5,452,760	56.4
1949	6,476,810	67.0

(2) *Poultry population.* The rehabilitation of the poultry industry practically started from scratch. In 1946, the poultry population was barely 27 per cent of prewar (1940). In 1949 this had increased to 21,171,900 representing 76 per cent of the prewar number and an increase of 180 per cent over that of 1946. Approximately 90 per cent of the poultry population in 1949 consisted of chickens.

The following table indicates the growth of the poultry population:

INCREASE IN POULTRY PRODUCTION

YEAR	NO. OF BIRDS	PERCENT OF 1940
1940	27,775,000	100.0
1946	7,535,200	27.1
1947	9,871,090	35.5
1948	15,705,740	56.5
1949	21,171,900	76.2

(3) *Meat and Poultry Production.* On the basis of the 1940 production as 100 per cent, the combined production of meat and poultry in 1947 amounted to barely 39 per cent. By 1949 the production had risen to 70 per cent of the 1940 figure representing an increase of 79 per cent over that of 1947.

The following table indicates the progress made in meat and poultry production:

PROGRESS IN MEAT AND POULTRY PRODUCTION

YEAR	MEAT (M. T.)	EGGS (M. T.)	TOTAL PRODUCTION	PERCENT OF 1940
1940	158,949	78,364	237,313	100.0
1947	63,971	27,850	91,821	38.7
1948	87,415	44,308	131,723	55.4
1949	105,329	59,731	165,060	69.6

c. *Fisheries.* The production of fish, the most important source of animal protein in the diet, has progressed at a rate faster than that in other foodstuffs. In 1946, fish production amounted to only 49,600 M.T. or 29 per cent of the 1940 figures. This production rose to 211,450 tons in 1947 representing 124 per cent of prewar (1940) production. In 1948, the production dropped noticeably owing to rampant dynamite fishing which affected the sources but increased again in 1949 to 226,400 M.T. or 133 per cent of the prewar (1940) production.

The following table indicates the progress in fish production:

YEAR	PRODUCTION (M. T.)	PERCENT OF 1940
1940	170,000	100.0
1946	49,560	29.2
1947	211,450	124.4
1948	195,078	114.8
1949	226,373	133.2

B. PRODUCTION TARGETS AND MEASURES FOR THEIR ATTAINMENT

The target or production goals set for the years 1940 to 1954 are based on what may be regarded as normal rates of growth in a normal state of society plus the probable influence that special effort, now being exerted and will continue to be exerted in the future, may have in accelerating the tempo of that growth. The program being designed to distribute the burden of production insufficiency in an unbalanced and under-developed economy, it naturally stresses the crucial problem of improving productive capacity in the agricultural industries. Special emphasis is placed, as it were, on accelerated production of rice, the Filipino's staple food, corn, and other food crops, meat and fish. In all of these the local output falls short of domestic requirement and have therefore to be replenished with importations. In a number of items the amount of importation draws very heavily on the country's dollar reserve. It is of course obvious that to the extent importations of food articles are reduced by corresponding increases in local production of the same or similar items, to that extent is dollar savings effected.

With respect to agricultural exports or dollar-producing items principal of which are sugar, copra and other coconut products, abaca and tobacco, the production aimed at would bring back these industries to their prewar level of importance in the country's foreign trade. It is, however, recognized that the rehabilitation and stabilization of the agricultural exports will be influenced more by the trends and conditions of their foreign markets than by local factors affecting production. It is almost certain, especially in the case of coconut, that if prices abroad are encouraging, production would soar or at least, be maintained at near-maximum level without much difficulty. Any downward trend in prices on the other hand, may be expected to discourage or limit production.

1. *Food crops.* The production targets for principal food crops led by rice and including corn, tubers, fruits and nuts, beans and vegetables, coffee, cacao and peanut are summarized as follows:

YEAR	PRODUCTION TARGET (1,000 M. TONS)	REQUIREMENTS (1,000 M. TONS)	RATIO OF SELF-SUFFICIENCY (PER CENT)
1940	3,857.8	4,078.3	94.6 [1]
1946	2,689.1	4,502.5	59.7
1947	3,441.6	4,591.2	75.0
1948	3,569.5	4,680.0	76.3
1949	3,897.1	4,768.5	81.7
1950	4,205.9	4,857.5	86.6
1951	4,477.7	4,946.2	90.5
1952	4,684.0	5,034.9	93.0
1953	4,842.6	5,123.6	94.5
1954	4,961.3	5,212.5	95.2

The overall production in 1949 of the principal food items mentioned above already surpassed the corresponding figures for 1940. The production target for 1950 represents an increase of 7.9 per cent over the actual production of 1949. The yearly increases up to 1954 average about 5 per cent, a conservative target. By 1954, the production of the principal food crops is expected to reach 4,961,300 M.T. or an increase of almost 29 per cent over the corresponding 1940 production and representing about 95 per cent of the total domestic consumption requirement for that year which will amount to 5,212,500 M.T. computed on the basis of the 1940 per capita consumption.

A breakdown of those principal food crop items showing area planted, production and consumption requirements follow:

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[1] Includes rice, corn, other cereals (wheat and wheat flour, etc.) fruits and nuts, root crops, beans and vegetables, coffee and cacao, and peanut.

[2] Philippine imports of wheat flour amount to about 120,000 M.T. annually.

a. *Rice: Actual and projected area, production and requirement:*

		PRODUCTION		REQUIREMENT		RATIO OF SELF-SUFFICIENCY
YEAR	AREA (HAS.)	CAVANS (PALAY)	M. TONS (PALAY)	CAVANS (PALAY)	M. TONS (PALAY)	(PER CENT)
1940	2,080,380	53,698,800	2,362,746	55,061,500	2,422,708	97.5
1946	1,649,960	36,893,900	1,623,330	60,347,700	2,655,300	61.1
1947	1,879,600	47,460,000	2,088,240	61,536,400	2,707,600	77.1
1948	2,026,380	50,928,500	2,240,850	62,727,300	2,760,000	81.2
1949	2,164,100	56,620,200	2,491,300	63,915,900	2,812,300	88.6
1950	2,215,000	59,505,500	2,618,200	65,104,500	2,864,600	91.4
1951	2,258,000	63,511,100	2,794,500	66,295,500	2,917,000	95.8
1952	2,306,000	66,539,300	2,927,700	67,484,100	2,969,300	98.6
1953	2,350,000	68,947,400	3,033,700	68,672,700	3,021,600	100.0
1954	2,380,000	70,702,000	3,110,900	69,863,600	3,074,000	101.2

In 1940 the Philippines was almost 98 per cent self-sufficient in rice. In 1949 the prewar rice hectarage and production were already surpassed but owing to increased requirement due to population growth, the production for said year amounted to only 88.6 per cent of domestic requirements.

Gradual yearly increases in production beginning with the year 1950 will make the country almost 99 per cent self-sufficient in rice supply by 1952, assuming that the rate of per capita rice consumption does not materially change, and beginning 1953 the country will be more than self-sufficient in rice production.

The yearly increases in production are to be attained mostly through the following measures:

(1) *Expansion of cultivated area* — The government has established a rice and corn project capitalized at ₱15 million for opening up public and vacant private agricultural land through mechanized method. Briefly, the project aims to open up and plant to rice and corn within three years 20,000 hectares in Ala Valley, Cotabato; 10,000 hectares in Maramag, Bukidnon; and 10,000 hectares in Panacan, Palawan, or a total of 40,000 hectares. As of June 30, 1950, 5,600 hectares were cleared in Ala Valley; 3,128 hectares are planted to rice, 60 hectares to corn and 150 hectares to peanuts; in Bukidnon, 1,957 hectares were cleared, 1,223 hectares planted to rice, 29 hectares to corn; and in Panacan, 310 hectares were cleared, 280 hectares planted to rice. A harvest of 98,220 cavanes of palay, 890 cavanes of corn and 1,500 cavanes of peanuts are expected from these areas toward

the end of 1950. Carried through to 1954 at the same rate of expansion from year to year, this special government project is expected to account for a substantial portion of the annual increase in rice and corn production.

The balance of the projected increase in cultivated area from year to year not covered by the government project is estimated to be covered through the natural process of economic growth brought about by the pressure of population. The government encourages and promotes land settlement in sparsely populated regions as a measure of enhancing the opening up and development of new areas.

Steps have already been taken to assist farmers and landowners faced with a shortage of work animals in working their farms through the operation of tractor pools in Nueva Ecija, Mindoro, Bataan, Isabela, Leyte and Capiz. It is planned to establish additional tractor pools in other provinces to insure the cultivation of basic areas and facilitate the opening up of new areas, as soon as funds could be made available for this purpose.

(2) *Improvement of irrigation facilities.* Out of the total rice area of more than 2 million hectares, not counting the areas planted to sugar cane and other crops, only 107,500 hectares are under irrigation, 85,000 hectares being served by the 15 existing national irrigation systems and 22,500 hectares by the 10 Friar Lands Estate irrigation systems inherited from the Spaniards. Practically all of the irrigation systems deteriorated during the war years, either through physical damage sustained or forcible abandonment and neglect. The slow process of repair and rehabilitation has been going on since the liberation with the end still far from sight. This work of repairing and improving the established irrigation system is to be continued at a faster rate.

Simultaneously with the repair work at least three medium-sized irrigation projects have recently been completed and others are actually under construction or will soon be started as follows:

IRRIGATION PROJECTS COMPLETED SINCE THE LIBERATION

Name of Project	Location	Area Irrigated
1. Angat River (Ext.)	Bulacan and Pampanga	1,070
2. Maasin River	Bulacan and Pampanga	2,000
3. Bakal-Bakal	Nueva Ecija	1,000
		4,070

IRRIGATION PROJECTS UNDER CONSTRUCTION

1. Pampanga River	Nueva Ecija	20,000
2. Hebega River	Polangui, Albay	500
3. Inarilia River	Calabanga, Camarines Sur	1,300
4. One project	Leyte	4,000
		25,800

IRRIGATION PROJECTS TO BE STARTED SOON

(Within the year 1949 or early 1950)

1. Santo Tomas River	Zambales	6,000
2. Sumacan River	Quezon	3,500
3. Miray-Aca River	Balanga, Bataan	120
4. Candon-Sta. Lucia	Ilocos Sur	2,300
		11,920

Apart from the above irrigation projects of permanent character based on costly damming of rivers, immediate expansion of irrigation facilities is being accomplished through the installation of irrigation pumps. In the early part of this year, six irrigation pumps, each capable of irrigating 100 to 200 hectares, were installed in Rizal province with very successful results; increased yields were obtained besides the fact that the availability of irrigation water makes it possible to raise two crops of rice over the same irrigated field in one year. Since then, ₱1 million has been made available for the installation of more irrigation pump units in other places where water supply is available and there are suitable rice lands to irrigate. Before the end of 1950 or by 1951 at the latest, it is expected to have in addition to those already in operation at least 56 more irrigation pump units, each unit capable of irrigating 200 hectares on the average, or a total of over 11,000 hectares. An additional allotment of ₱4 million was recommended for this purpose. A direct increase of 10 or more cavans per hectare results from adequate irrigation facilities.

(3) *Use of Commercial Fertilizer.* As an immediate measure of increasing crop yield per unit area, the program calls for special efforts at encouraging farmers to use commercial fertilizer in crop production. The main objective is to be able to put into effective use in rice production at least 5,000 tons of fertilizer which would be sufficient to fertilize upwards of 30,000 hectares annually. It is estimated that an average increase of 5 to 10 cavans of palay per

hectare is obtained by fertilization. This program is to be launched beginning the 1950 planting season and carried on through the years as an important phase of the general agricultural extension activities. The sum of ₱1 million has already been authorized to be used as a revolving fund for the procurement of the needed fertilizer to be loaned to farmers; another ₱5 million was earmarked for future operations.

It is also part of the long-range plan to put up in connection with power development an ammonium sulfate fertilizer plant to produce the fertilizer needs of the country. The sum of ₱11 million has been earmarked for this purpose.

(4) *Use of Superior Varieties.* One of the causes of the low average yield of rice in the Philippines is the use of very many varieties which are extremely poor yielders. Definite steps are to be taken to replace the inferior varieties with standard ones of superior yielding ability and quality. Among such well known standard varieties are Kinampupey, Dumali and Kinandang Puti for upland rice planting; Macan Bino, Macan Sta. Rosa, Ramelon No. 2, Raminad No. 3 and Elon-Elon for first crop lowland and Apostol and Guinangang for second crop lowland or paddy rice cultivation. A few hybrids developed through breeding and selection since 1939, of which the most prominent is known as Buenketan, are potential materials for use in variety replacement. The program of variety replacement aims at reducing the number of rice varieties planted commercially to the barest minimum in order to obtain a high degree of uniformity in both yield and quality of the rice grain produced. This part of the program naturally calls for increased and continuous activities on variety improvement through judicious breeding and selection, firstly, for rice, and secondly, for corn and other crops produced commercially, and further for the controlled production of improved seeds to be used for replacement purposes. To carry out this program, it is planned to establish and/or develop appropriate experiment stations and seed farms — two in Luzon, one in the Visayas and one in Mindanao, — that will serve the needs of the farmers in the respective regions. At least ₱1 million would be required for the operation of the Experiment Station and Seed Farms and for facilitating replacement seeds to farmers.

Improvement of production through the use of selected seeds of superior varieties is to be worked out not only in the case of rice but also of corn, vegetables, fruits, and other crops. The progress of variety replacement may be slower than might be desired as it depends upon how popular and acceptable the movement will be to the common farmers who do not easily change an old-time practice. In the case of rice, however, a goal of at least 50,000 hectares for variety replacement annually is well within the possibility of attainment. All other conditions being the same, a field planted to a standard variety ought to yield 10 cavans of palay or more per hectare higher than what it would yield if planted to an inferior variety,

(5) *More Effective Control of Pests and Diseases.*. Steps are to be taken to acquire for local use modern equipment for fighting such pests as locusts, army worms, and rice stem borers which cause enormous damage to rice every year. With the adoption of more effective methods of controlling these pests, rice output will increase considerably even without increasing the area under cultivation.

b. Corn: *Projected Production and Requirement*

	PRODUCTION		REQUIREMENT		RATIO OF PRODUCTION TO REQUIREMENT
YEAR	CAVAN SHELLED	M.T. SHELLED	CAVAN SHELLED	M.T. SHELLED	(PER CENT)
1940	10,038,300	572,185	10,038,300	572,196	100.0
1946	5,811,600	331,260	11,000,000	627,000	52.8
1947	8,284,100	472,190	11,217,500	639,400	73.9
1948	9,105,500	519,010	11,433,300	651,700	79.6
1949	9,369,600	534,070	11,649,100	664,000	80.4
1950	10,111,900	576,400	11,868,400	676,500	85.2
1951	11,310,800	644,700	12,084,200	688,800	93.6
1952	12,105,000	690,000	12,301,800	701,200	98.4
1953	12,517,500	713,500	12,517,500	713,500	100.0
1954	12,735,100	725,900	12,734,100	725,900	100.0

In 1940, the country was fully self-sufficient in corn. In 1949 corn production was still 7 per cent below the 1940 production and only 80 per cent of the total domestic requirement. From 1950 to 1954, the annual increase in corn production will average about 5 per cent of the preceding year. By 1952, the country will be 98 per cent self-sufficient in corn and will be fully self sufficient in 1953 with a production of 713,500 metric tons, (12,517.500 cavans shelled). Plans for corn development include the use of hybrid corn and/or at least the use of selected seeds, but increases in production through this means would not visibly affect the total average production for the whole country, until such time as a substantial portion of the corn area adopts desirable practices in commercial production.

c. Tubers: *Projected Production and Requirements*

YEAR	AREA (HAS.)	PRODUCTION (M. T.)	REQUIREMENTS (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT (PER CENT)
1940	178,010	615,026	625,088	98.3
1949	172,360	522,230	760,300	69.5
1950	173,500	556,300	774,500	71.8
1951	175,000	573,000	788,600	72.7
1952	176,500	590,200	802,800	73.5
1953	178,000	607,900	816,900	74.4
1954	180,000	626,100	831,100	75.3

Production of tubers is generally a sideline, a supplementary activity to the production of major crops. The country was almost self-sufficient in tubers before the war. In 1949 tubers production was 15 per cent below that of 1940 and barely 70 per cent of domestic requirement. As the production of rice and corn is increased, no extraordinary increase in the production of tubers, the substitute food crops of the people. is anticipated from 1950 to 1954 unless factories are established for the manufacture of starch and alcohol from cassava. The increase that might materialize would be the result of natural growth incident to the opening up of new areas and the progress of land settlement. Along with rice production or the planting of any other major crop new settlers almost always make it a point to cultivate patches of root crops for home needs. By 1954, it is reasonable to expect that tuber production shall have at least reached a point above the prewar (1940) production or 75 per cent of the total domestic requirements based on the 1940 per capita consumption. That would mean an increase of less than 2,000 hectares in area from that of 1940.

d. *Fruits and Nuts: Projected Production and Requirements*

YEAR	AREA (HAS.)	PRODUCTION (M. T.)	REQUIREMENT (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT
1940	201,440	256,340	255,183	100.5
1949	203,000	269,750	296,400	91.0
1950	205,000	377,400	302,000	125.0
1951	208,000	384,900	307,500	125.2
1952	210,000	392,600	313,000	125.4
1953	212,000	400,500	318,500	125.7
1954	215,000	408,500	324,000	127.0

The production of fruits and nuts in 1949 already exceed the prewar (1940) production. On the basis of the 1940 per capita consumption the 1949 fruit and nut production was already 91 per cent of total domestic requirements. The growth of the fruit industry is gradual and steady even without extraordinary inducements. In 1950, fruit and nut production is certain to exceed the corresponding 1940 production by 47 per cent. and should the consumption level remain the same as in 1940, this production would be 125 per cent of domestic requirement. In effect, the Philippine export of native fruit products will then exceed her importation of temperate fruits, such as apples, grapes, etc. From 1950 upward, the normal increase in fruit and nut production will more than parallel the increase in domestic requirements so that the favorable economic situation of the fruit and nut industry will be maintained. Increase per capita consumption of this food article may also result thus improving the diet of the people.

e. *Beans and Vegetables: Projected Production and Requirements*

YEAR	AREA (HAS.)	PRODUCTION (M. T.)	REQUIREMENT (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT (PERCENT)
1940	49,400	42,430	81,529	52.0
1949	48,880	59,680	94,300	63.3
1950	52,000	62,100	96,100	64.6
1951	53,000	64,300	97,800	65.7
1952	54,000	66,000	99,600	66.3
1953	55,000	68,500	101,300	67.6
1954	56,000	70,900	103,100	68.8

Production of copra, oil and dessicated coconut is expected to be influenced by prices prevailing at any given period. The production potential of the existing coconut plantations is more than the projected production. What happens actually is that when prices of coconut products are encouraging, people become active in saving the nuts and making copra.

This was illustrated as follows: In 1946 when the average wholesale price per 100 kilos of copra was ₱18, only about 200,000 metric tons were produced, or about 28 per cent that of the 1940 production. When in 1947 prices suddenly went up to an average of ₱35 per 100 kilos or about twice that of 1946, the production rose up to almost 1 million metric tons which exceeded the 1940 production by 47 per cent. The average price of ₱52 per 100 kilos in 1948 was ₱17 higher than that of 1947, but because of the adverse effects of several typhoons during the latter part of 1947, only 883,000 metric tons or 12 per cent below that of 1947 but still 30 per cent above that of 1940 were produced. It was expected that the 1949 production would equal if not surpass that of 1948, but prices continued to go down from the high level of ₱60 per 100 kilos during the month of June 1948 to ₱26 during the same month in 1949 with the result that the 1949 production dropped to less than 700,000 metric tons, which was 20 per cent below that of 1948 and 5 per cent below that of 1940. All other factors remaining the same, the pattern of copra production from 1950 to 1954 will depend upon the price.

Measures already being taken and will be pursued vigorously in the years ahead for the stabilization and further development of the coconut industry include the following:

(1) *Control of kadang-kadang and other diseases of coconut.* The so-called kadang-kadang disease of coconut is supposedly caused by a virus against which no adequate therapeutic remedy has been found. Once a tree is infected by the disease, symptoms of which manifest themselves at the advanced stage, the tree gradually stops fruiting, while its leaves turn yellow and eventually dies. The only remedy is to destroy the tree as a means of minimizing the source of infection. Special appropriations are annually provided for the study of this and other diseases and the campaign for their eradication and such appropriations will be increased in the coming year, especially if the technical assistance of expert American pathologists in the study and control of these diseases would materialize.

(2) *Industrialization of coconut products and by-products and improvement of copra.* These activities are to be spearheaded by the NACOCO and include the following specific projects, for which an

initial release of ₱1,200,000 for 3 months' operations was approved in 1949, a portion of which has been spent for:

(a) Commercial production of such coconut by-products as nata de coco, santan, coir fiber, coconut meal, and coconut husk.

(b) Construction of modern types of copra drier for copra improvement.

(3) *Intensification of research work* on coconut variety improvement through selection, fertilization of coconut plantations for increased production and other aspects of coconut culture.

(4) *Renovation of Coconut Plantation.* This would largely be the responsibility of individual coconut planters whose plantations have ceased to be economically efficient due to old age, neglect or general run down condition. Renovation may take the form of general cleaning of plantations, ranging out of diseased or already useless trees, replanting vacant spaces and adopting scientific cultural practices including planting of leguminous cover crops and use of commercial fertilizers. What many planters need in this respect is proper technical guidance which the government should provide and financial assistance from loaning institutions.

b. *Abaca: Projected Production*

YEAR	AREA (HA.)	PRODUCTION (N. T.)
1940	291,530	172,343
1949	282,700	74,510
1950	285,000	90,000
1951	290,000	103,500
1952	295,000	124,200
1953	300,000	149,000
1954	305,000	178,800

At present much of the reported abaca areas is non-effective in the sense that it does not produce to its full capacity, if at all. The marked difference in production between the prewar year (1940) and the postwar years including 1949 is a consequence of this reduced productive capacity. In all the importance abaca growing regions, extensive areas reported as abaca lands are found in varying degrees of deterioration caused by neglect, abandonment or plain abuse in the form of strip-butchering resorted to in the years immediately after the liberation to take advantage of the high price of abaca fiber. The

There are many native vegetables produced and eaten in the rural areas which are not recorded. Hence, it appears that the intake of these foodstuffs is very low. Production of beans and vegetables which are of record was much less than the total domestic requirements even before the war. In 1949, vegetable production was only 63 per cent of domestic requirement computed on the basis of the 1940 per capita intake. Beginning 1950, the area planted to beans and vegetables and their total output will already exceed those of 1940, but the situation of comparative deficiency in this food category will hardly be altered. By 1954 with an area under beans and vegetables at least 13 per cent and production 67 per cent above those of 1940, the country will only attain 69 per cent sufficiency in these foodstuffs.

f. *Coffee and Cacao Projected Production and Requirements*

YEAR	AREA (HAS.)	PRODUCTION (M. T.)	REQUIREMENT (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT (PERCENT)
1940	8,650	2,520	11,718	31.5
1949	13,160	4,460	13,500	33.0
1950	13,300	5,000	13,700	36.5
1951	13,400	5,300	14,000	37.9
1952	13,600	6,000	14,200	42.3
1953	13,800	6,500	14,500	44.8
1954	14,000	7,000	14,700	47.6

Without any special effort of the establishment of specific projects of planting of coffee and cacao are not expected to increase more than 100 to 200 hectares annually in view of the concentration of attention on the production of major crops. In 1949 coffee and cacao production surpassed the corresponding 1940 production by 77 per per cent, but it only represented 33 per cent of domestic requirement. From 1950 to 1954 the situation is expected to improve, although the improvement will be slow. By 1954 coffee and cacao production may reach 48 per cent of total requirements.

G. *Other Food Crops.* In other food crops playing some prominent part in the national economy, of which sugar and peanut deserve mention, the country is more than self-sufficient. In the case of sugar, about 20 per cent of the prewar production was consumed locally, 34 per cent in 1949. By 1954, the country would be exporting 78 per cent of its total sugar production. In the case of peanut, production in 1949, amounting to 9,570 metric tons was already 252 per cent of domestic requirement. From 1950 to 1954, the situation is expected to hold if not improve, as any increase in domestic requirement can be covered by a corresponding increase in production, if necessary.

2. *Technical Crops.* The technical or export crops herein considered are confined to coconut, sugar cane, abaca, tobacco, and ramie. Except the last one mentioned, ramie, the development of which belongs to the future, these crops have been for a long time the basic dollar-producing agricultural industries of the Philippines. In 1940 the aggregate area planted to these export crops was 1,630,760 hectares and total production was almost 2 million metric tons. The corresponding figures for 1949 are 1,416,370 hectares (87 per cent) and 1,549,250 metric tons (79 per cent), respectively. The program from 1950 to 1954 naturally aims at increased production through the rehabilitation of the prewar cultivated area, and/or establishment of new areas to replace old plantations which are no longer profitable to operate or rejuvenate. The more urgent objectives, however, in regard to the rehabilitation of this sector of the agricultural economy is to stabilize the position of the various export products to the end that they may withstand the appreciable fluctuations of prices in the consuming markets. This objective will be attempted to be realized through improvement in production efficiency that will result in lower cost of production and in improved quality of the products.

a. *Coconut and Coconut Products: Projected Production*

1940	1,051,210	738,474	3,000	40,518
1949	965,500	698,120	2,980	58,760
1950	965,500	703,500	3,300	60,000
1951	966,000	710,500	3,500	61,500
1952	966,500	714,000	3,600	63,000
1953	966,500	717,600	3,700	64,000
1954	967,000	721,200	3,900	65,000

No significant increase in coconut area is contemplated from 1950 to 1954. The present area of a little less than one million hectares will just be maintained. Whatever new planting might be made would probably only make up for coconut trees that would drop out of production because of old age or otherwise be exterminated because of disease infection.

program of abaca development is not so much to expand the so-called basic abaca area but to increase its effectiveness through complete or partial rejuvenation of the damaged or deteriorated plantations and/or replacement of old and no longer profitable areas with new plantations. Through this process of doctoring back the abaca industry to at least its prewar rate of efficiency in production, the most that may be expected is to raise by 1954 the level of production to that of 1940. This means an increase of abaca production by 140 per cent in five years from the low level of 74,500 M. T. in 1949.

Significant measures already taken and are actually in the process of implementation to achieve an early rehabilitation and stabilization of the abaca industry include the following:

(1) *Financial assistance to abaca planters.* A system of granting short term loans to abaca planters in Mindanao, the Bicol region, Leyte and Samar for the purpose of accelerating the rehabilitation of private abaca plantations is now in force.

For the Mindanao area short term loans are given at the rate of ₱800 per hectare released in four installments.

For the Bicol region, a maximum loan of ₱400 per hectare is allowed for complete renovation of plantations and ₱350 per hectare for partial renovation, that is, replanting of vacant spaces not exceeding 50 per cent of the plantation.

For the Leyte-Samar area, the maximum loan per hectare for complete renovation is ₱300 on titled lands or awarded and patented public lands and ₱250 on lands covered by tax declarations, and for partial renovation, ₱250 and ₱200 per hectare, respectively.

In all cases the loans are given in gradual releases based upon a periodical appraisal of the value of the plantation being rehabilitated.

(2) *Abaca development project of the government.* A development project managed by the NAFCO involving 10,000 Ha. in the Davao area is in the process of implementation. This project, started in 1949, involves a capitalization of a little over ₱13 million spread as follows:

YEAR	AREA TO BE DEVELOPED	OUTLAY INVOLVED
1949-1950	2,500 Ha.	₱2,634,153.82
1950-1951	3,500 „	4,229,083.02
1951-1952	4,000 „	6,261,458.09

The release of ₱2,600,000 to cover the first years of operation which will put under cultivation 2,500 hectares has already been authorized.

A change in the original plan was effective by limiting the NAFCO to the development of 2,500 hectares. The balance of 7,500 hectares is left open for operation by private capital. The Philippine Abaca Development Company has started a program for the development of this area under contract with the government on toll basis.

(3) *Open invitation to foreign capital to chip in.* Foreign capital is encouraged to invest in abaca development in the Philippines. Of all the agricultural export products produced locally, abaca is the most certain of a market as the world demand for this fiber is great while the present supply is limited.

(4) *Improvement in production method.* Ordinary government activities such as encouraging abaca producers to practice clean culture, take prompt and adequate measures to check the inroads of destructive abaca diseases of which the mosaic disease is the most serious at present, adopt more efficient methods of stripping as a means of improving the quantity of fiber produced and of reducing production costs are to be intensified, together with other measures such as the establishment of abaca experiment stations for studies on the control of abaca pests and diseases, variety selection and improvement for disease-resistance and high yield, and propagation of desirable seedlings for distribution.

c. *Sugar Cane: Projected Production*

YEAR	AREA (HA.)	PRODUCTION (M. T.)
1940	229,700	997,067
1949	128,960	692,910
1950	149,700	780,000
1951	167,200	870,000
1952	197,900	950,000
1953	210,000	1,050,000
1954	230,000	1,150,000

At the rate the sugar industry has recovered since the liberation, the prewar level of sugar production is expected to be reached in 1953. By that time the Philippines will be producing enough sugar to cover its full export quota to the United States and its domestic consumption requirements.

There will not be any more extension of area after 1954 when the basic sugar cane area of 230,000 hectares shall have been reached. This is on the assumption that no new markets for Philippine sugar shall have been found or established by them, which is likely to be the case. Efforts at stabilizing the sugar industry will likely be directed at increasing efficiency in production, and not expansion of area. As a matter of fact, certain marginal and submarginal areas may eventually be withdrawn from sugar cultivation by force of economic necessity. From the day the graduated tariff on Philippine exports, including sugar, to the United States becomes operative, the sugar industry has to increase its production efficiency and réduce production costs to make up for the tariff, or fold up. Measures now being taken and which will be further intensified in the years ahead to raise the efficiency of sugar production include the following:

(1) Adoption of modern machinery and labor saving devices in cane culture and production.

(2) Widespread use of commercial fertilizers for increased yield.

(3) Intensified work on improvement through breeding and selection.

(4) Commercial planting of only the highest yielding varieties.

(5) Withdrawal of marginal and submarginal areas from cultivation and their replacement with more desirable ones.

(6) Research on other problems of the sugar industry.

A "Sugar Stabilization Fund" provided in C. A. No. 567 is intended precisely to facilitate the undertaking of measures that would stabilize the sugar industry but no disbursement of the money accrued since liberation has been made up to this date.

d. *Tobacco, Projected Production, Imports and Exports*

YEAR	AREA (HA.)	PRODUCTION (M.T.)	IMPORT (M.T.)	EXPORT (M.T.)
		(LEAF TOBACCO)	(LEAF TOBACCO)	
1940	57,920	32,115	1,143	12,222
1949	38,740	21,920	100[a]	4,500[a]
1950	42,000	24,200	200	6,000
1951	45,000	26,600	300	8,000
1952	50,000	30,600	400	10,000
1953	55,000	35,200	500	12,000
1954	60,000	40,500	450	15,000

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[a] Estimate based from import and export figures during first 6 months.

Traditionally, the bulk of tobacco production in the country consisted of the filler type which has provided the base of Philippine tobacco export both in the form of leaf tobacco and in the form of manufactured products, such as cigars and cigarettes. In 1949, the tobacco industry was far from having recovered its prewar importance in the national economy. In both areas cultivated (38,740 hectares) and leaf production (21,920 M. T.) the tobacco industry was at least 33 per cent below the level of 1940. Exportation of tobacco leaf may reach 4,500 M. T. in 1949 or 37 per cent of the 1940 export of over 12,000 tons, while exports of cigars and cigarettes may only reach 2 million units or less than one per cent of the 1940 exportation of around 343 million units.

On the other hand, importation of tobacco products, particularly cigarettes, has reached unprecedented high levels. In 1948, over 11 billion units of cigarettes were imported and about the same amount may be imported in 1949 as more than 5.5 billion units have been imported during the first six months of this year, representing about 27 per cent of the corresponding 1940 cigarettes importation. In terms of value, total tobacco production in 1948 was worth ₱12 million, total tobacco exports less than ₱3 million and total tobacco imports over ₱49 million. In 1949 the corresponding figures were: value of total production, ₱11 million; total estimated exports based on the first six months figures, ₱4 million; and total estimated imports, ₱46 million.

The program of rehabilitation of the tobacco industry stresses those three points:

(1) *Development of aromatic leaf tobacco production.* It will require no less than 15,000 hectares to produce about 14,400 metric tons, the equivalent in leaf tobacco of the more than 11 billion units of cigarettes imported in 1948. The program contemplates the cultivation of at least 5,000 hectares within the next five years to produce the equivalent of 35 per cent of the cigarette importation.

(2) *Stabilization of the price of native filler tobacco and gradual increase in its production.* This is to be accomplished by encouraging producers of filler tobacco to adopt modern methods of production that would reduce production costs, improve the quality of leaf tobacco produced and increase the farmers' income. The producers will be assured of a ready and steady market for their tobacco through the purchasing and marketing services of the National Tobacco Corporation of the Philippine Government.

(3) *Production of Cigar Wrapper Tobacco.* This part of the program contemplates the production of 3,600 quintals (180 M.T.)

of wrapper tobacco on 250 hectares to be developed within a period of 3 years.

The program seeks an outlay of over ₱14 million to be spent for the above project as follows:

	1950	1951	1952
Aromatic tobacco development	1,877,000	1,904,000	2,425,900
Filler tobacco production	2,925,900	2,578,100	2,273,700
Wrapper tobacco production	242,800	207,900	287,300
Total	5,045,700	4,690,000	4,986,900

Under favorable conditions, the pre-war (1940) hectarage and production of tobacco may be reached in 1953 or at the latest, 1954.

e. *Ramie*

YEAR	AREA (HA.)	PRODUCTION (M.T.)
1940	400	849
1949	470	50
1950	600	800
1951	800	1,600
1952	1,200	2,500
1953	1,600	3,400
1954	2,000	4,400

Interest in ramie production is increasing but the final pattern of the industry's development is yet to emerge from the various plans and proposals advanced lately by interested parties. The nucleus of the ramie industry already exists and expansion of ramie production would be relatively easy provided the product is assured of a market.

In 1940 and 1941 the Philippines already exported 849 tons and 1,114 tons, respectively, principally to Europe. The projected plan of expanding ramie production is based on the likely probability that decorticated fiber produced in the country could be processed and converted into finished textile in Japan and the manufactured product brought back and consumed in the Philippines. Under the Trade Agreement between the Philippines and SCAP (Occupied Japan) for the period July 1, 1950 to June 30, 1957, the schedule of this country's ramie exports thereunder amount to $1,750,000. This amount represents about 70,000 piculs of ramie (at ₱50 a picul), or the production of 2,800 Ha. Thus, the proposed goals may be increased accordingly to 3,000 Ha. beginning in 1951 to 6,000 Ha. in 1954.

Private enterprise is also ready to put up a weaving mill for ramie fiber, and plans are under way for the expansion of ramie production by private corporations in Mindanao. A system of financing similar to that granted abaca planters should also be adopted in order to assist the producers of ramie in their operations.

f. *Jute (saluyot)* — Little attention has so far been given to the commercial production of saluyot in the Philippines. Introductory work this year by the Bureau of Plant Industry in 12 provinces has resulted in the planting of about 250 hectares to saluyot with an estimated harvest of 100 tons of fiber. A local corporation known as the Philippine Fiber Processing Corporation is expected to start manufacturing jute bags toward the end of this year using for the time being imported jute fiber. A nationwide interest in the extensive and large scale growing of saluyot may be encouraged to supply as much as possible the raw material needed by the plant. The factory will have an ultimate annual capacity of 16,000,000 bags for which the production of about 20,000 hectares of saluyot will be needed.

In order to promote the production of saluyot by the small farmers, some form of financing similar to that granted to abaca planters should be adopted.

3. *Livestock and poultry.* It has already been pointed out elsewhere that the country's livestock population was almost decimated during the war years with only 38 per cent of the big animals and 27 per cent of poultry left. In 1946 the situation of the livestock population compared to that of 1940 as follows:

	1946 Number	Percent of 1940
Carabao	1,388,870	46.1
Cattle	443,530	31.8
Horses	151,260	44.0
Hogs	1,460,780	32.9
Goats	182,730	43.5
Sheep	19,030	47.6
Poultry	7,535,200	27.1

Measures aimed at conserving the animal stock which survived the war have been adopted and continue to be enforced to accelerate the rate of increase of the livestock population. A law was passed immediately after the liberation prohibiting the slaughter of male and female carabaos, horses, mares and cows still fit for work or for breeding purposes. This law has helped to a large extent in the rehabilitation of these large animals.

The government also took steps to import stock for breeding purposes and to encourage animal production, particularly poultry and swine, as a measure of increasing the supply of locally-produced animal foods.

a. *Actual and projected livestock and poultry population:*

	ACTUAL		PROJECTED	
	1940	1948	1949	1954
Big animals in number of head:				
Carabaos	3,015,400	1,715,530	1,921,360	3,386,100
Cattle	1,396,260	513,270	671,560	1,057,200
Horses	343,500	183,290	201,630	324,730
Hogs	4,446,790	2,636,820	3,348,900	5,687,700
Goats	420,000	277,900	305,800	492,490
Sheep	40,000	25,950	27,560	36,880
Total	9,661,950	5,452,760	6,476,810	10,985,100
Per cent ...	100	56.4	67.0	113.7
Poultry:				
No. of birds ...	27,775,000	15,705,740	21,171,900	36,154,600
Per cent	100	56.5	76.2	130.2

The aggregate livestock population in 1950 is expected to reach 84 per cent of the corresponding 1940 population and exceed it by 14 per cent in 1954. The carabao population shall have been fully rehabilitated to its prewar number between 1953 and 1954 but cattle and horses will still be short 24 per cent and 5 per cent respectively, of complete rehabilitation by 1954. Swine will reach its prewar number in 1950 and exceed the 1940 figure by 28 per cent in 1954.

In the case of poultry the prewar number will be attained between 1950 and 1951 and be exceeded by 30 per cent in 1954.

The growth of the livestock industry may be gauged more accurately from the following table which represents the measure of all livestock and poultry in terms of cattle unit.[1]

YEAR	CATTLE UNITS (NO.)	PERCENT OF 1940
1940	7,682,870	100.0
1946	3,044,630	39.6
1947	3,384,170	44.0
1948	4,225,550	55.0
1949	4,907,170	63.9
1950	5,892,480	76.7
1951	6,440,210	83.8
1952	7,028,540	91.5
1953	7,677,150	99.9
1954	8,392,510	109.2

In terms of cattle units the livestock industry, including poultry, is expected to attain its prewar measure between 1953 and 1954.

b. *Projected meat and poultry production vs. requirement*

YEAR	PRODUCTION (M. T.)	PERCENT OF 1940	REQUIREMENT (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT (PERCENT)
1940	237,313	100.0	245,350	96.7
1949	165,060	69.4	284,900	57.9
1950	216,070	91.3	290,200	74.7
1951	233,283	98.3	295,500	78.9
1952	247,593	104.3	300,800	82.3
1953	262,909	110.8	306,100	85.9
1954	279,308	117.7	311,400	89.7

While the livestock population is expected to be fully rehabilitated to its prewar level by 1954 yet the gap between local production of meat and poultry, and domestic consumption requirements of these products will be wider then than in 1940 due to increase in population. On the basis the 1940 per capita intake of meat and poultry products, production in 1950 will amount to only about 75 per cent of total requirements, and in 1954, to almost 90 per cent, compared to the ratio of almost 97 per cent in 1940. Decidedly, it will take a larger period than five years for the Philippines to attain, if at all, the same measure of sufficiency in meat and poultry products that it enjoyed before the outbreak of the last global war.

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[1] One cattle unit in the Philippines is the equivalent of the average dressed weight of native cattle or 110 kgm.

c. *Projected production of milk and other dairy products vs. requirement.*

YEAR	PRODUCTION (M. T.)	PERCENT OF (1940)	REQUIREMENT (M. T.)	RATIO OF PRODUCTION TO REQUIREMENT (PERCENT)
1940	9,330	100.0	80,104	11.6
1949	5,843	62.6	92,400	6.3
1950	6,499	70.0	94,100	6.9
1951	7,271	78.0	95,800	7.6
1952	8,131	87.1	97,600	8.3
1953	9,093	97.5	99,300	9.2
1954	10,170	109.0	101,000	10.1

The Philippines has never been a heavy producer of milk and other dairy products. Dairying in commercial scale has yet to be developed in the country and this development in the natural course of events will be a slow process.

d. *Problems of the livestock industry.* The program of livestock development including that of the dairy industry takes a long-range view of the manifold problems of the industry and the scientific approach to the solution of this problem.

(1) *Limits of animal population increase.* There is a maximum limit to the number of animals that the country's land and food resources can support immediately. The livestock population in 1954 without reaching the saturation point may exceed that of 1940 by a narrow margin. The country has about one million hectares of pasture land ready for immediate development, and an additional potential of approximately three million hectares available for animals to be raised exclusively on the range. Beyond that point expansion or growth of the livestock industry can not be reckoned with anymore in terms of mere number of head. As consumption requirements for meat, milk, eggs, and other animal products increase in direct proportion to

the growth of the human population, it will be absolutely essential to raise the efficiency of livestock production if importations of animal food products are to be prevented from increasing. This problem involves improvement of stock raised in every farm, intensifying the production of rapidly multiplying and fast growing small animals, such as swine and poultry, improvement and more efficient use of pastures to increase their carrying capacity, production of more foods from local materials, adoption of scientific methods of livestock farming, and the development of dairying both as a regular business enterprise and as a home industry with a view to attaining a more equitable dispersal of wealth among our farming class.

(2) *Improvement in range production of livestock.* Native livestock is much inferior to improved foreign breeds in size, thriftiness, quality and productive capacity. Gradual replacement of these inferior animals with superior breeds or their improvement through grading and selection is considered a major problem which requires much research and extensive work. Importation of pure breed or improved stock for propagation and for upgrading with native stock will be continued on a bigger scale than heretofore. For this purpose the establishment and operation of adequate livestock farms, supplemented by artificial insemination, ambulatory breeding vans and the loaning of breeding sires, are contemplated in different parts of the country where the industry is being encouraged.

The establishment of livestock farms on the rich natural pasture-lands, particularly in Mindanao, will require a system of financing which will enable the livestock raisers to purchase their stock from the Government livestock farms and breeding stations, capitalize such stock for operating and other expenses. For instance, a livestock farm may require ₱200,000.00 for capital and other needs, of which half is to be spent for stocking and the other half for other capital and operating needs. The livestock raiser could put in the ₱100,000.00 for the livestock, and the banks or financial institutions could finance the other half, accepting the livestock and other improvements on the livestock farm security. In this regard, the RFC and the PNB should be asked to adopt a credit policy by which livestock farming along this line may be promoted and financed.

(3) *Improvement of pastures and proper feeding.* The program contemplates more extensive research work along these lines, preferably with the cooperation of some experts from abroad.

(4) *Effective control of animal diseases.* The country has made notable progress in controlling such dangerous and destructive animal diseases as rinderpest, anthrax, hog cholera, and avian pests and with proper vigilance their effective control may be maintained. The real problem, in connection with animal disease control, is the local production of sera, vaccines and other biologics needed for disease control work in adequate quantities.

e. *The livestock industry of the Philippines has two principal objectives.* One is that of providing meat foods for the entire nation, and the other, that of furnishing motive power to Philippine agriculture.

Motive power — The Philippines is fortunate to be located in that part of the globe where there is abundant rainfall, and crops can be grown throughout the year. Because of this favorable location the country is able to raise not only rice, the principal staple crop, but also such export crops as sugar cane, abaca, coconut and tobacco. Corn, fruits, beans, vegetables, and root crops are also raised in considerable quantities but mainly for domestic use. In the production of these crops, the work animal has been the main source of power on the farm. In the Philippines the principal work animals are the carabao and cattle, though considerably more carabaos than cattle are used. Before the war, some farm machinery had been introduced in an effort to increase the production of sugar cane, the principal export crop of the Philippines. Of late, more tractors have been brought in, to farm out lands other than those intended for the cultivation of sugar cane. It is said that a tractor of 30 to 35 horsepower is equal to the efficiency of 22 work animals, and can plow 3 hectares daily. In other words, the 2,125 units reported to have been introduced lately must have taken the place of 46,750 head of work carabaos and it is highly probable that this fact accounts for the cultivation of more agricultural land today than before the war. In 1939, the country used 1,868,279 work animals to farm out 3,953,810 hectares of land, or a proportion of one for every two hectares of farm land. Therefore, in providing the nation with foods of animal origin, proper provisions should at the same time be made to supply the needed number of animals for farming, at the rate of one to every two to three hectares of land, for unless the present methods of lowland rice culture are revised, no amount of mechanization can successfully displace the carabao in the soft and muddy soil of rice paddies where this animal is by nature most at home and displays its greatest efficiency.

4. *Fisheries: Projected Production and Requirement*

	Production					
Year	Commercial Fishing Outfit	Fishponds	Mun. Fisheries and Sustenance Fishing	Total	Requirement	Ratio of Production to Requirement
	(M.T.)	(M.T.)	(M.T.)	(M.T.)	(M.T.)	(Percent)
1940	114,540	20,330	33,130	170,000	187,246	90.8
1949	50,950	24,508	150,915	226,373	217,500	104.1
1950	59,904	26,158	172,124	258,186	221,600	116.5
1951	68,858	27,708	193,332	289,998	225,600	128.5
1952	77,812	29,458	214,541	321,811	229,700	140.1
1953	86,767	31,108	235,749	353,624	233,700	151.3
1954	95,721	32,758	256,958	385,473	237,800	163.0

Total fish production in 1950 would appear to exceed by 16 per cent the total domestic requirement of fish and fish products for that year based on the 1940 per capita intake. By 1954 the ratio of fish production to requirement is expected to be 163 per cent. There would seem to be an apparent overproduction of fish and complete coverage of fish importation but in reality such would not be the case. The truth is that the per capita consumption of fish in the Philippines, which in 1940 amounted to 11.3 kg., is way below the desired standard from the nutritionist's point of view so that the probable consequence of increased fish production would be a little more fish in the diet of the people than heretofore. Pending the development of the local fish canning industry. the Philippines will probably continue importing a certain amount of canned fish products.

The bulk of the fish production increase will be realized from an accelerated development of municipal fisheries and sustenance fishing in which most of the small-scale Philippine fishermen are engaged. In 1950 the catch from these sources amounting to 172,000 M.T. exceeded that of 1940 by 390 per cent. By 1954 production or fish catch from these sources is expected to double the 1950 figure.

Production from fishponds in 1950 is expected to be about 26,000 M. T. or 30 per cent more than that in 1940 and with the gradual development of new areas or improvement in the efficiency of the present fishpond areas, production from this source is expected to reach more than 32,000 tons in 1954 or 60 per cent above the prewar production.

This fish catch of commercial fishing outfit, which used to be the main prop of the local industry before the war is expected to reach to about 52 per cent of the prewar catch in 1950 and about 80 per cent in 1954. The deep-sea fishing industry suffered a severe set-back during the war years with the loss of practically all fishing boats, most of which were owned and operated by Japanese.

The following measures have been taken and will be continued by the government to encourage the development of the fishing industry:

a. Enforcement of conservation measures in fishing such as strict observation of open and closed seasons, particularly in brackish and fresh water fishing grounds.

b. Education of the people in the adoption of modern equipment and apparatus for catching fish and scientific methods of fish culture, and fish preservation.

c. Development of new fishing areas, with special emphasis on the conversion of mangrove and swamp areas into fishponds. A number of steps have been taken to encourage people to engage in fishpond development, to wit: (1) A law was enacted (Republic Act No. 293) allowing the sale of areas used for fishpond in favor of the permittees. Formerly such areas could only be leased and not purchased. (2) Financial assistance is being extended by the RFC and other loaning agencies to fishing boat and fishpond operators under certain conditions. (3) Spawning milkfish is being protected by prohibiting the catching thereof and regulating the exportation of milkfish fry to insure an adequate supply of the same for local fishpond operators.

d. Stocking of lakes and streams with fresh-water fish to make these natural resources produce more.

e. Establishment of adequate fishery stations in strategic locations to facilitate the carrying out of essential research projects on fisheries and the training of fishermen in improved methods of fishing and/or fishpond development.

f. Establishment and operation of fish processing and preservation centers for the better utilization of fish products.

5. *Forestry: Projected Production of Timber and Lumber*

Year	Production 1000 Bd. Ft.	Domestic consumption 1000 Bd. Ft.	Exportation 1000 Bd. Ft.
1940	898,000	708,164	189,836
1946	239,994	239,994	——
1947	636,747	631,944	4,803
1948	929,035	899,629	29,766
1949	1,047,000	1,012,000	35,000
1950	1,140,700	1,095,700	45,000
1951	1,177,500	1,117,500	60,000
1952	1,185,000	1,100,000	85,000
1953	1,190,000	1,080,000	110,000
1954	1,210,000	1,070,000	140,000

The lumber industry which suffered heavy war damage through the destruction of more than 80 per cent of its saw mills and logging outfits have made spectacular recovery. From the low level of 240 million board feet of timber produced in 1946 which represented 27 per cent of the prewar (1940) production, timber output rose to 929 million board feet in 1948 and an estimated 1,047 million board feet in 1949 thus exceeding the 1940 production by 3 per cent and 16 per cent respectively. The amount of sawn lumber produced increased during the same period in almost the same proportion. Undoubtedly, the heavy local demand for lumber as the principal construction material used in the enormous building and reconstruction projects in both industry and housing, public and private, commercial and residential, provided the excessive incentive for the speedy revival and rehabilitation of the lumber industry.

Export of timber and lumber had been restricted from 1946 until the first week of June 1949. In 1948 timber and lumber exports amounted to only 30 million board feet and in 1949, 35 million board feet, representing 16 per cent and 18 per cent respectively of the corresponding (1940) export.

Domestic consumption of lumber and timber has increased from 240 million board feet in 1946 to over 1 billion board feet in 1949. It is expected that local consumption of lumber and timber will continue to increase until 1951 in view of the construction boom that may reach its peak during that year, after which the local demand may remain stationary, if not actually hit a downward trend.

The projected production of lumber and timber from 1950 to 1954, presupposes a more or less stable demand for this construction material locally. Slight improvements in the situation of the lumber and timber exports are anticipated from year to year although the prewar volume is not expected to be reached by 1954 owing to the stiff competition Philippine lumber is up against in the consuming markets. By 1954, production is expected to reach over 1.2 billion board feet, an encrease of 34 per cent from that of 1940 and 15 per cent from that of 1949. Exportation is expected to reach 140 million board feet in 1954, 26 per cent below that of 1940. The projected production could be increased should the estimated demand for local consumption and for export increase. The production potential of the lumber industry on the basis of present facilities is much more than the projected production.

The program of forest utilization and conservation in so far as the government is concerned demands the taking of the following measures:

a. *Forest inventory.* The purpose of a forest inventory is to determine not only the extent of the forest resources but also the kind and quality of the timber supply. Philippine forests contain different species of trees classified under several groups according to the strength and utility of the lumber and timber produced from them and their availability and commercial importance in trade. A complete inventory of Philippine forests has yet to be made. This will involve an expenditure of over ₱.5 million.

b. *Land classification.* This activity is essentially complementary to forest inventory and to agricultural development, the purpose being to determine those portions of the public lands that could be classified as alienable and disposable public lands for agricultural purposes. Extensive portions of these areas used to be forest lands long since denuded of trees and are ideal for cultivation. The five-year program of land classification will require an expenditure of a little over ₱1 million.

c. *Reforestation and afforestation.* These are measures to prevent depletion of the country's forest resources. They have been undertaken but only on very limited scale since 1916. Forest areas which have been logged and need to be replanted have increased at such fast rate as to outstrip the program of reforestation and afforestation. In order to cope with the need for a more extensive program of forest replenishment, a minimum expenditure of ₱6.5 million is needed for the next five years.

d. *Forest experiment stations.* The only forest experiment station now existing is the Central Forest Experiment Station located at the School of Forestry in Los Baños, Laguna. It is planned to establish in the next five years three other regional stations: one in Northern Luzon, one in Eastern Visayas and one in Northern Mindanao. Eventually, the number will be increased to five so as to have one in Western Visayas and another in Southern Mindanao. Experiment stations are indispensable for studies and research on dendrology, forest propagation and conservation and other matters including forest pathology. The establishment and maintenance of these forest experiment stations will require an expenditure of almost ₱2.5 million in five years.

e. *Forest products laboratory.* Studies are under way to determine the possibility of Philippine woods and other forest products as sources of raw materials for the development of such industries as the manufacture of plywood, paper, varnish, and allied products. The first requisite for the establishment of such industries is extensive research on technical problems relating to processing and manufacturing of these products and the utilization of both primary and secondary forest raw materials.

The establishment of a forest products laboratory is essential for such research activities. It will require an expenditure of almost ₱2 million to establish an adequate forest laboratory and keep it operating for five years.

f. *Forest protection and conservation.* Every year there are unthinking and unscrupulous individuals who open up wooded areas and wantonly cut down and destroy trees and other minor forest products for the apparently legitimate excuse of cultivating such areas to agricultural crops. The practice severally followed is wasteful, to say the least. Even among forest licensees engaged in the extraction of forest products, primarily timber, from their concessions, very often, no effort is exerted to conserve and preserve the same. Much timber and minor forest products as as rattan, copal, and gum elemi are wasted. It is to minimize, if not prevent altogether, such wasteful and destructive practices that adequate measures of protection and conservation become essential. Forest destruction caused by forces of nature and by man through neglect and plain abuse depletes the source and has to be guarded against to preserve this natural source of wealth.

Strengthening the field force of the government entrusted with the protection and conservation of the forest areas will require about ₱300,000 in five years.

C. BASIC PROBLEMS OF AGRICULTURAL PRODUCTION

In the foregoing paragraphs, there have been indicated certain problems of agricultural production which are either related to some physical or material deficiency or are natural outgrowths of more serious shortcomings in the general system of economic and social structure of the country. Such problems as inadequate number of work animals for farm operation, lack of agricultural machinery, equipment, tools, and facilities for cultivating, planting and harvesting, for processing and for storage of agricultural products, inadequate supply of fertilizer and insecticides, need for more irrigation systems and allied necessities are purely material deficiencies which could be overcome readily through increased investments. The types of problem in agriculture that are more difficult to remedy are those which partake of the nature of deeply rooted deficiencies in the general economic and social structures of the country. Briefly, these basic problems may be enumerated as follows:

1. *High level of illiteracy among the farming population* — A very large portion of the farming population hardly know how to read and write. For one reason or another, there seems to be a very low regard for farming in the country so that those who are able to acquire some kind of school education seek employments or occupations other than actual farming. On the average, therefore, the capacity for understanding of the great mass of the farming population is limited. The average farm hand in the Philippines with his carabao and plow and worn-out ideas charged with superstition inherited from his ancestors does not, and is not in a position to appreciate the advances of agricultural science for his own benefit, much less the practical application of that science in his farm operation. Hence the almost static, if not worsening condition of farming in the country in the face of progress in other fields, giving rise to the next basic problem of local agriculture — the backwardness of general farm practice.

2. *Backwardness of general farm practice* — This is the next most important and all embracing problem in the implementation of any agricultural program for improvement or increased production. There is a saying that "a mule may be led to water but it may not be made to drink." By analogy, it is one thing to make fertilizers for instance available to every farmer in the country and another thing

to make him use that fertilizer. The chances are that he will not be interested in the fertilizer program unless he is already fully convinced of its advantages. Similarly, he may not be expected to give up his traditional carabao and plow for the efficient "steel monster" called tractor which he has not learned to handle as yet and for which he has to invest a considerable sum to begin with. He will most likely show the same reaction to any scheme that is new to him, especially it it runs counter to his set of ideas and which have not yet been dissipated through proper education and enlightenment. Offshoots of the low level of understanding among the farming population and the general backwardness of local farm practices resulting from this unsatisfactory condition are manifest in varied ways, each a distinct and separate problem the solution of which is to be found in the proper education and guidance of the farming population. Among the most widespread of these backward farming practices are the following:

a. Commercial planting of inferior crop varieties which are extremely low-yielders, despite the availability of superior ones.

b. Raising the inferior types of breeds of livestock and almost complete indifference to the need for selection of more desirable stock for breeding purposes.

c. Wasteful cropping methods such as exposing farm to soil erosion, planting of the same kind of crop on the same piece of ground year after year without the benefit of crop rotation, green manuring or application of commercial fertilizers;

d. Ineffective and unorganized manner of combatting plant pests and diseases;

e. Stubborn adherence to outmoded farm implements and tools in farming.

f. Cultivation of marginal and submarginal lands despite high cost of production, poor yields, and exceedingly low income from such lands.

g. Lack of effort to improve the quality of and to standardize agricultural products.

h. Unorganized marketing and distribution of farm products.

3. ***Unsatisfactory land tenure and land distribution*** — There exists a very unequal distribution of land holdings in the Philippines.

Farms of less than one hectare to less than 5 hectares in area constitute 87 per cent of total farms; those from 5 to less than 20 hectares, 11.7 per cent; and those from 20 hectares up, 1.3 per cent of total number of farms. In aggregate area farms below 5 hectares in area account for 3.3 million hectares or 49 per cent of total area; those from 5 hectares to less than 20 hectares in area, 2 million hectares or 30 per cent of total area; and those from 20 hectares up to 1.4 million hectares or 21 per cent of total area. In other words, the bulk of agricultural production in the country comes from small-sized farms and these are generally operated by the owners themselves who employ ancient, outmoded means and methods of production. With the possible exception of sugar production which is concentrated among fairly large-sized farms operated with the benefit of modern farm machinery and equipment, the production of other farm crops, led by rice, even in the extensive land holdings, is accomplished through many hands operating in the same manner as small landowners do, only with the additional burden that falls on tenants or sharecroppers. Very rarely does the big landowner or hacendero work his farm by administration. He leaves the dirty work to his tenants for a specific rental in kind or in cash. This relic of an anachronistic system of land tenure with all its concomitant evils and opportunities for abuse of the little fellows has been the root cause of intermittent agrarian troubles in the country.

On both large and small farms, the use of labor per unit of area is excessively heavy owing to the crude methods employed. The farm operator, be he a tenant or the owner of his small farmstead, depends largely upon his own muscles for power and upon antiquated tools for equipment. This system of farming places the burden of agricultural production upon a very large percentage of population. More, it pegs the farm operator to a mere subsistence basis, producing little to sell and in turn having little with which to purchase goods, services or even additional needed foods and other essentials of a decent living

4. *Lack of adequate and adopted system of agricultural credit*-- There are no organized lending institutions in the Philippines with branches in the rural areas which are available to small farm operators in need now and then of small sums for their farm operations. Tenants look up to their landlords for cash advances which are paid back if ever, at exorbitant rates of interests. In many instances, the tenant—borrower sinks deeper and deeper into indebtedness via such periodical borrowings from his landlord. A farm operator who farms his own land finds it difficult to secure credit from the existing banks and is often driven to the arms of usurers when in need of money for

his operations. This lack of adequate and adopted system of agricultural credit entering exclusively to the average farm operator is one of the greatest stumbling blocks to agricultural progress.

D. MEASURES FOR THE SOLUTION OF THE BASIC AGRICULTURAL PROBLEMS

1. *Establishment of an effective Agricultural Extension Service* — The problem of furnishing guidance and education to the farm people as a measure of raising their level of intelligence and making them adopt progressive changes in their mode of thinking and doing things calls for a systematic, coordinated, and effective agricultural extension service capable of reaching every farm and hamlet in the country. Without such effective agricultural extension service, it will not be possible to carry out any constructive program of agricultural development based on scientific approach to the problems involved; the general farm practices in the country will remain in their backward state; the farming population will continue to be indifferent to constructive changes for the elevation of their standard of living.

The nucleus for an effective agricultural extension service already exists. Agricultural extension work is now being carried out by separate agencies of the government operating independently of each other. There is an extension division in the Bureau of Plant Industry, the activities of which are naturally confined to plants or farm crops, and an extension division in the Bureau of Animal Industry which confines the subject matter of its activities to livestock and poultry. Some amount of agricultural extension work is also undertaken by the College of Agriculture, U. P., the Bureau of Fisheries, the Bureau of Forestry, and the Division of Soil Survey and even by such government corporations as the NACOCO, the NAFCO and the NATOCO. There exists in the field of agricultural extension much overlapping of activities and an absolute lack of coordination for efficiency. The following steps, therefore, are to be taken to remedy the situation and establish a unified, all-embracing, systematically coordinated and effective agricultural extension service:

a. All agricultural extension work now undertaken by several agencies will be consolidated in one office to be known as the Bureau of Agricultural Extension under the Department of Agriculture and Natural Resources.

b. The system of giving out technical information and conducting general agricultural extension work will be improved through proper training of extension personnel, use of modern methods of imparting information, including printed matters translated into the principal dialects the farming people will readily understand, motion pictures depicting improved agricultural practices, actual farm demonstrations and other effective means of teaching and inducing the farm men, women and children to think more progressively and to do things the better way.

c. Attempts will be made to reach and serve every farm and farm home in the country by the unified extension service.

d. While the principal phases of the agricultural extension work will relate to improved farm practices in cooperation with the men folks, extension work with farm women in home economics and with the rural youth on the farm and home skills to prepare them for leadership and a useful life in the future will be accorded due emphasis.

e. Adequate appropriation estimated at a little over ₱2 million annually for the first year and gradually increasing as the service expands from year to year will be provided for the organization and operation of the organized agricultural extension service.

2. *Intensification of agricultural research and establishment of a central Agricultural Experimental Station* — Results of studies and researches proven to be of practical value in actual life are the subject matter of agricultural extension teaching. Without a continuous stream of scientific information based on research findings, agricultural extension work would become stale.

While agricultural research in the Philippines has furnished the answer to many an applied farm problem and contributed in no small measure to the development of local agriculture, yet the variety and scope of farm problems that remain unsolved, especially in agricultural economics, including farm management, agricultural engineering, plant pest and disease control, livestock and crop improvement and processing of agricultural products, have a very wide range. It is a prerequisite to the scientific development and improvement of Philippine agriculture that the answer to these technical problems in all phases of agriculture be had through intensive researches and investigations. In order to meet this need, the following steps are to be taken:

a. Agricultural research activities of the government will be coordinated. There shall be established only one national plan or program of separate research institutions principal of which are the Bureau of Plant Industry, the Bureau of Animal Industry and the College of Agriculture. All research work in agriculture now being undertaken by certain government corporations will be taken away from them and distributed to whichever of the three institutions herein mentioned such research activities correspond.

b. There will be established a central agricultural experiment station, preferably located at the College of Agriculture, Los Baños, which shall serve as the common ground of research of the College of Agriculture, the Bureau of Plant Industry and the Bureau of Animal Industry working on a cooperative basis. In turn, the agricultural experiment stations of the Bureau of Plant Industry and livestock and breeding stations of the Bureau of Animal Industry, most of which are strategically located in the provinces, shall be made available for any research work the College of Agriculture may desire to carry out in these stations, again in cooperation with the two Bureaus.

c. Research activities, embraced in the national program will be extended and intensified to meet the needs for specific information on problems which vary in different localities of the country.

d. The agricultural experiment station, stock farms, and breeding stations of the Bureau of Plant Industry and the College of Agriculture now existing will be equipped with modern and adequate facilities for better service, and new stations or sub-stations will be established in regions where none now exists and conditions warrant such establishment.

e. Training of more research workers, both in the local institutions and abroad will be undertaken to solve the problem of lack of competent personnel in some experiment stations.

f. The government will provide adequate appropriation with which to carry out the above measures that will place agricultural research in the Philippines on a high plane of efficiency. It is estimated that an annual appropriation of almost ₱3.5 million will be needed for carrying this part of the program.

3. *Adoption of land reform* — The prevailing system of small land holdings among the majority of the rural population is not conducive to economic progress. No matter what a family of say five members does on less than five hectares of land, it cannot live above mere subsistence farming. The situation of the tenant family in the big landed estates is worse. Not only is the family pinned down to subsistence farming but, more important than all else, it is denied the satisfaction of owning the piece of land the members of the family work on and does not have the incentive to improve the land occupied only temporarily.

Furthermore, adoption of mechanized farming on small parcels of land is economically impracticable.

Proper steps, therefore, initiated in the past to solve the tenancy problem and to bring about more equitable distribution of landed property among the people will be pursued more energetically. These measures include the following:

a. Acquisition by the government of extensive landed estates and their subdivision and scale to the actual occupants or tenants in convenient-sized parcels.

b. Acceleration of the survey of public agricultural lands and their subdivision into parcels at least 8 hectares in area for disposition to settlers, preferably the landless elements of the country.

c. Increasing financial aid and technical assistance extended to settlers in new areas in order to encourage the movement of the population from congested to the sparsely populated regions of the country, thereby accelerating agricultural production.

d. Adoption of mechanized agriculture in those extensive land holdings retained by private landowners and vacated by tenants.

4. *Establishment of an adequate system of agricultural credit* — Extension of agricultural credit to certain favored agricultural industries of which sugar is the most outstanding is undertaken by the RFC, the PNB and other commercial banks. The rice industry, the abaca industry, and to a very limited extent the coconut and tobacco industries, have lately been extended some agricultural loans by these lending institutions, but as a general rule, the average farm operator with some animals and a few hectares of land planted to other crops or used for livestock raising do not have ready access to any of these banks. This lack of credit is a handicap that retards development of many of the country's agricultural industries. In order to remedy this problem of a large portion of the farming population consisting of small landowners, one or more if not all the following steps simultaneously are to be taken:

a. Establishment of a central agricultural credit institution in the City of Manila with branches in every province or center of agricultural activity to which the average farmer in need of modest amounts of crop loan from time to time for his farm operation may have ready access and be accommodated.

b. Expansion of the present loaning activities of the RFC and other established lending institutions, through the same procedure of putting up branches in strategic places and liberalizing their loan policy so as to accommodate not only the big sugar, rice or abaca producers but also the little fellows producing other crops or otherwise engaged in livestock raising, fishing and similar productive pursuits that contribute to economic growth.

E. NEEDED TECHNICAL ASSISTANCE FROM ABROAD AND TRAINING OF FILIPINO TECHNICIANS

In the implementation of this program of agricultural development, technical assistance from experts abroad and proper training of Filipino technicians on the different branches of agricultural science listed hereunder are necessary:

1. *Plant Pest and Disease Control*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 4 members
2. *Agricultural Economics*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 6 members
3. *Plant Breeding*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 4 members
4. *Agricultural Extension*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 2 members
5. *Agricultural Engineering*
   (a) Technical Assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 4 members
6. *Soil Conservation*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 4 members
7. *Animal Disease Control*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 2 members
8. *Animal Husbandry with Special Reference to Feeds and Feeding*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 2 members
9. *Veterinary Research*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 2 members
10. *Forestry*
   (a) Technical assistance from U.S. — 1 member
   (b) Fellowship to U.S. — 3 members

It is estimated that 11 foreign experts to render technical assistance to the Philippine Government (one each for every branch of science enumerated in the foregoing, except in Plant Breeding where two experts are required), at the rate of ₱12,000 per annum each, will entail an expenditure of ₱132,000 annually on the part of the Philippine Government, while the Filipino technicians and scientists who may be sent to the United States as pensionadoes, numbering around 30 in all at the rate of ₱9,000 each per annum, will entail an expenditure of ₱270,000 for one year on the part of the United States Government. Should the 11 foreign experts and 30 Filipino technicians and scientists be finally interchanged, an outlay of not less than ₱545,000 per annum, including transportation, clothing allowance, and other expenses, shall have to be provided by both governments.

F. IMPLEMENTATION OF THE AGRICULTURAL PROGRAM (RECAPITULATION)

The twin objectives of increased agricultural production, particularly of food crops, livestock and fish, and of rehabilitating and stabilizing the production of technical or export crops are to be attained by measures, both immediate and long-ranged either in implementation or in effect, or both.

1. *Expansion of cultivated area.* — This measure is considered the shortest cut to the attainment of increased production of food crops, particularly, rice and corn. Through the use of mechanized equipment and methods in opening up and cultivating new areas to rice and corn, the normal rate of expansion resulting from the pressure of population increase is to be accelerated.

Increased plantings of other food crops such as fruits, tubers, vegetables and beverage crops will be attained as part of the results of an intensified food production campaign.

2. *Improvement of productive efficiency.* — Increased agricultural production, both of food crops and of technical crops is to be attained by measures that will raise the rate of yield per unit area and thereby improve the efficiency of farms. These measures include the following:

a. Expansion of area served by irrigation through the improvement of existing irrigation systems, construction of new systems and, as an immediate measure, installation of irrigation pumps.

b. Replacement of inferior with superior varieties, particularly in the case of rice and corn. The effect of this measure is immediate to the extent it is carried out; its implementation is of long duration.

c. Extensive use of commericial fertilizers and/or adoption of crop rotation and green manuring practices, the effect of which is also immediate, although their implementation will mark time as success of the measure depends upon the proper education of the people.

Establishment of a local fertilizer factory is a corollary to this measure.

d. Effective control of pests and diseases. This is a perpetual measure in the sense that pests and diseases which cause damage to cultivated crops are seasonel and ever present and the fight against them must be waged constantly to minimize destruction. Special attention will be given to the fight against locust, army worms and other pests that wreak havoc on rice and vegetables, the cadang-cadang and bud rot diseases that threaten to wipe out the coconut industry, and the mosaic disease of abaca which threatens the ruin of the abaca industry.

e. Replacement of marginal and submarginal areas. This will be a gradual process, the effect of which will be to increase overall production without necessarily increasing the area under cultivation. Marginal and submarginal areas are actually economic liabilities which contribute to the perpetuation of conditions of poverty in many agricultural areas. This measure is especially urgent in the case of sugar cane and abaca.

3. *Rehabilitation and stabilization of technical crops.* — The general measures for increasing productive efficiency of farms enumerated in the preceding numbers are equally applicable to food crops as to technical crops. The problem of technical or export crops is largely one of reducing cost of production of the export products so as to place them on a competitive basis with similar products from other sources, consumed in the same world markets.

a. For the stabilization of the coconut industry, additional measures to be taken include (1) industrialization of coconut products by which coconut by-product will play an important part as a source of income; (2) improvement of copra, through the installation and use of more efficient copra driers; (3) renovation of old coconut plantations and general improvement in cultural practices to increase yield.

b. For the rehabilitation and stabilization of the abaca industry, additional measures include: (1) renovation of damaged plantation and improved culture; (2) adoption of more efficient methods of stripping or extracting the fiber to improve quality of product. A system of granting loans to abaca planters is now actually in force to encourage and enhance rehabilitation of the abaca industry.

c. For sugar cane, in addition to the expansion of cultivated areas to the pre-war level, measures for the stabilization of the industry include: (1) intensive research on the various problems of the industry embracing the adoption of modern machinery and labor-saving devices in cane culture and production; (2) widespread use of fertilizers; and (3) commercial planting of the highest yielding varieties, all designed to improve yield and reduce cost of production.

d. For the stabilization and development of the tobacco industry, measures to be taken place special emphasis on the expansion of production of aromatic leaf tobacco for cigarette manufacture. The native filler tobacco will be stabilized through the adoption of improved methods of production and curing and better marketing services.

4. *For the improvement and development of the livestock industry.* — Superior breeds of animal will be imported for breeding purposes, upgrading and selection of native stock intensified, scientific methods of feeding and control of animal diseases will be made more thorough.

5. *For increasing fishery production.* — Measures to be taken include: (a) enforcement of conservation measures in fishing; (b) adoption of modern equipment and apparatus for catching fish and scientific methods of fish culture and preservation; (c) development of new fishing areas; and (d) stocking of lakes and streams.

6. *For the development of industries based on forest products, especially lumber.* — Modern equipment and methods of production will be adopted and essential government projects such as forest inventory, land classification, reforestation and afforestation, and forest products utilization will be intensified.

7. *Creation and/or streamlining of vital government agencies dedicated to public service for agricultural development.* — Measures under this category are intended to solve the basic problems in agriculture which partake of the nature of deeply rooted deficiencies in the general economic and social structure of the country. They include:

(a) Creation of a Bureau of Agricultural Extension in the Department of Agriculture and Natural Resources into which all extension activities now being undertaken by different government agencies will be consolidated and coordinated to the end that the vital problem of bringing information to the farming population, educating them in the better way of doing things, and lifting their level of understanding and their standard of living may be solved thus overcoming the handicaps of backward agricultural practices which make farming a drudgery.

(b) Establishment of a Central Agricultural Experiment Station, coordination and intensification of agricultural research. This is important for the solution of the varied problems, mostly technical in character, relating to agricultural improvement. Results of research studies are the bases on which an effective agricultural extension work rests.

(c) Creation of an office of Agricultural Economics. This has been a long-felt need, the filling of which cannot be delayed much longer. It is essential for any systematic agricultural planning and development work to have basic data and figures on agricultural statistics, economics of production, information on relative efficiencies of different farm methods, equipment and devices and similar information on agricultural economics which require extensive studies.

(d) Establishment of an adequate system or agricultural credit. This is to solve the problem of financing which confronts agricultural producers, especially the small operators who need from time to time modest amounts of crop and other kinds of agricultural loans to carry on with their farm operation or expand their activities.

(e) Strengthening, through additional personnel and facilities for research, regulatory, and promotional activities, the existing bureaus and offices directly engaged in the furtherance of agricultural science and production, principally:

1. Bureau of Plant Industry
2. Bureau of Animal Industry
3. Bureau of Fisheries
4. Bureau of Forestry
5. Bureau of Lands
6. Soil Survey and Conservation Service

8. *Utilization of the services of foreign experts and training Filipino technicians abroad.* — Technical assistance from foreign experts is intended to fill the deficiency and shortcoming of available local technical skill and knowledge both in method of agricultural research, education and actual development work.

The training of Filipinos abroad in different lines of agriculture is intended to help elevate the standard of Filipino technicians to modern levels so that in time, the progress of agricultural science and development in this country may be accelerated with foreign assistance.

G. FINANCIAL REQUIREMENT

Estimated total financial requirement of the five-year agricultural progress amounts to almost ₱554.3 million of which dollar expenditures add up to ₱90.2 million and peso expenditures ₱373.8 million. The financial requirement is classified as follows:

1. *Outlay for development of agricultural industries.* — This portion of the financial requirement totals ₱401.5 million of which dollar expenditures add up to $82.9 million and peso expenditures ₱235.5 million. It represents the minimum level of needed investment, public and private, in the field of actual development for the attainment of the goals of production set forth in this program for the various agricultural industries including all the primary food crops, major technical crops, livestock, fishery, and forestry. It includes both capital investment and operation expenses necessary for development work, such as opening up new areas, replacement of unproductive areas, cultivation of damaged plantations, and improvement of the productive capacity of Philippine farms through the establishment of more irrigation systems, adoption of improved techniques of production, use of fertilizers, modern machinery and equipment, and allied measures. Its breakdown by individual industries follows:

ITEMS	TOTAL	1950	1951	1952	1953	1954
			(IN THOUSAND PESOS)			
Total	401,493	93,810	84,294	78,776	73,781	70,832
Rice and Corn	71,808	19,984	14,790	13,034	12,000	12,000
Coconut	58,000	10,000	11,000	12,000	12,000	13,000
Sugar	62,000	15,000	14,500	12,500	11,000	9,000
Abaca	61,760	9,760	13,000	13,000	13,000	13,000
Tobacco	14,430	2,730	2,925	2,925	2,925	2,925
Ramie	8,500	1,000	1,500	1,500	2,000	2,500
Fruits and Nuts	8,400	1,400	2,100	1,400	1,400	2,100
Beans & Vegetable	7,120	3,120	1,000	1,000	1,000	1,000
Root Crops	2,290	340	450	450	450	600
Coffee & Cacao	580	90	70	140	140	140
Peanut	8,000	1,000	1,500	1,500	2,000	2,000
Fisheries	15,470	3,084	3,410	3,218	2,939	2,819
Livestock	27,795	7,034	7,049	5,178	4,235	4,299
Forestry	55,340	19,268	11,000	10,931	8,692	5,449

2. *Outlay for essential government service in agriculture.* — This portion of the financial requirement totals ₱150.1 million of which dollar expenditures add up to $6.3 million and peso expenditures ₱137.5 million. It represents needed government appropriations for the establishment and operation of needed agencies or increasing the personnel, providing adequate facilities, and expanding the services of already established government agencies directly engaged in promotional, from research or regulatory work in agriculture which are indispensable to the development of the various industries.

Its breakdown by individual agencies follows:

ITEMS	TOTAL	1950	1951	1952	1953	1954
			(IN THOUSAND PESOS)			
Total	150,115	30,792	29,676	30,259	29,848	29,540
Agricultural Extension	10,970	2,140	2,170	2,200	2,230	2,230
Central Experiment Station and Office Research Coordination	15,970	3,500	3,500	3,000	2,970	3,000
Plant Research and Regulatory Work-Bureau of Plant Industry	26,460	6,290	5,160	4,960	4,970	5,080
Soil Survey and Conservation	2,900	570	560	590	610	570
Public Lands Administration	43,630	8,730	8,730	8,730	8,720	8,720
Bureau of Forestry	12,690	2,760	2,500	2,570	2,310	2,550
Bureau of Fisheries	9,530	1,920	1,590	1,780	2,060	2,180
Division of Agricultural Economics	555	112	116	109	108	110

3. *Outlay for experts and trainees.* — This part of the financial requirement totals about ₱2.7 million, of which dollar expenditures

add up to $967,500 and peso expenditures ₱786,150. It represents needed government appropriations for securing the services in the Philippines of at least eleven agricultural exports from abroad and sending to the United States at least 30 Filipino trainees in various fields of specialty every year for five years.

Its breakdown is as follows:

Items	Total	1950	1951	1953	1954
			(In thousand pesos)		
Total...........	2,725	545	545	545	545
For experts to P. I......	1,375	275	275	275	275
Trainees to be sent abroad	1,350	270	270	270	270

TABLE 1. PRODUCTION OF PRINCIPAL FOOD ITEMS, ACTUAL 1940 AND 1946 TO 1949 AND PROJECTED, 1950 TO 1954

(In metric tons)

Items	ACTUAL PRODUCTION					PROJECTED				
	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Rice, Rough	2,362,746	1,623,330	2,088,240	2,240,850	2,491,300	2,618,200	2,794,500	2,927,700	3,033,700	3,110,900
Corn	572,185	331,260	472,190	519,010	536,070	576,400	644,700	690,000	713,500	725,900
Other Cereals (a)	---	---	---	---	---	---	---	---	---	---
Fruits and Nuts (b)	256,340	261,430	369,450	229,080	269,750	377,400	384,900	392,600	400,500	408,500
Root Crops	615,026	434,100	460,220	524,340	528,230	556,300	573,000	590,200	607,900	626,100
Beans and Vegetables (c)	42,430	32,240	41,300	44,270	59,680	62,100	64,300	66,000	68,500	70,900
Sugar	997,067	62,640	119,670	395,740	692,910	780,000	870,000	950,000	1,050,000	1,150,000
Coffee and Cacao	2,520	3,700	5,170	4,560	4,460	5,000	5,300	6,000	6,500	7,000
Peanut	6,530	3,040	5,080	7,400	9,570	10,500	11,000	11,500	12,000	12,000
Fish and Fish Products	170,000	49,560	211,450	195,078	226,373	258,186	289,998	321,811	353,624	385,437
Meat and Poultry Products (d)	237,313	76,866	91,821	131,723	165,060	216,070	233,283	247,593	262,909	279,308
Milk and Dairy Products	9,330	4,188	4,543	5,276	5,843	6,499	7,271	8,131	9,093	10,170
Total	5,271,487	2,882,354	3,869,134	4,297,277	4,987,246	5,466,655	5,878,252	6,211,535	6,518,226	6,786,215

(a) Imported wheat and wheat flour, etc.

(b) Exludes the production of minor fruits like santol, breadfruit, etc.

(c) Excludes the production of minor vegetables like ampalaya, patola, upo, etc.

(d) Meat and poultry products for consumption.

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TABLE 2. NORMAL DOMESTIC REQUIREMENTS OF PRINCIPAL FOOD ITEMS, ACTUAL 1940 AND 1946 TO 1949 AND PROJECTED, 1950 TO 1954 ON THE BASIS OF THE 1940 PER CAPITA DISAPPEARANCE

(In metric tons)

	1940 Per Capita Requirements	Actual Requirements					Projected				
		1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Rice, Rough	146.1 (a)	2,422,708	2,655,300	2,707,600	2,760,000	2,812,300	2,864,600	2,917,000	2,969,300	3,021,600	3,074,000
Corn	34.5	572,196	627,000	639,400	651,700	664,000	676,500	688,800	701,200	713,500	725,900
Other Cereals (a)	6.4	105,941	116,300	118,600	120,900	123,200	125,500	127,800	130,000	132,400	134,700
Fruits and Nuts	15.4	255,183	279,900	285,400	290,900	296,400	302,000	307,500	313,000	318,500	324,000
Root Crops	39.5	625,088	717,900	732,000	746,200	760,300	774,500	788,600	802,800	916,900	831,100
Beans and Vegetables	4.9 (b)	81,529	89,100	90,800	92,600	94,300	96,100	97,800	99,600	101,300	103,100
Sugar	12.2 (c)	201,680	221,700	226,100	230,500	234,800	239,200	243,600	247,900	252,300	256,700
Coffee and Cacao	0.7	11,718	12,700	13,000	13,200	13,500	13,700	14,000	14,200	14,500	14,700
Peanut	0.2	3,902	4,300	4,400	4,450	4,500	4,600	4,700	4,800	4,900	5,000
Fish and Fish Products	11.3	187,246	205,400	209,400	213,500	217,500	221,600	225,600	229,700	233,700	237,800
Meat and Poultry Products	14.8	245,350	269,000	274,300	279,600	284,900	290,200	295,500	300,800	306,100	311,400
Milk & Dairy Products	4.8 (d)	80,104	87,200	89,000	90,700	92,400	94,100	95,800	97,600	99,300	101,000
T O T A L - - - -	290.8	4,792,645	5,285,800	5,390,000	5,494,250	5,598,100	5,702,600	5,806,700	5,910,900	6,015,000	6,119,400

(a) Equivalent to 93.0 kilos of milled rice.
(b) Excludes vegetables from tree crops, vine crops and other green vegetables utilized in considerable amounts by farm population.
(c) Includes muscovado sugar and panocha.
(d) Converted to fresh milk equivalent.

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TABLE 3. RATIO OF PRODUCTION TO REQUIREMENT, ACTUAL, 1940 AND 1946 TO 1949 AND PROJECTED, 1950 TO 1954

Items	ACTUAL (PER CENT)					PROJECTED (PER CENT)				
	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Rice, rough	97.5	61.1	77.1	81.2	88.6	91.4	95.8	98.6	100.4	101.2
Corn	100.0	52.8	73.9	79.6	80.4	85.2	93.6	98.4	100.0	100.0
Other cereals (a)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fruits and nuts	100.5	93.4	129.4	78.8	91.0	125.0	125.2	125.4	125.7	127.0
Root crops	98.3	60.5	62.9	70.3	69.5	71.8	72.7	73.5	74.4	75.3
Beans and vegetables	52.0	39.5	45.5	47.8	63.3	64.6	65.7	66.3	67.6	68.8
Sugar	494.4	28.3	52.9	171.7	295.1	326.1	357.1	383.2	416.2	448.0
Coffee	31.5	29.1	39.8	34.5	33.0	36.5	37.9	42.3	44.8	47.6
Peanut	167.4	70.7	115.5	166.3	212.7	228.3	234.0	239.6	244.8	240.0
Fish and fish products	90.8	24.1	101.0	91.4	104.1	116.5	128.5	140.1	151.3	163.0
Meat and poultry products	96.7	28.6	33.5	47.1	57.9	74.5	78.9	82.3	85.9	89.7
Milk and dairy products	11.6	4.8	5.1	5.8	6.3	6.9	7.6	8.3	9.2	10.1
TOTAL	110.0 (b)	54.5 (b)	71.8 (b)	78.2 (b)	89.1 (b)	95.9 (b)	101.2 (b)	105.1 (b)	108.4 (b)	110.9 (b)

(a) Imported wheat and wheat flour, etc.

(b) Excluding sugar, the only food item produced, 80% of which was exported before the war, the over-all ratio of our food production to requirement will be 93.1% in 1940; 55.7% in 1946; 72.6% in 1947; 74.1% in 1948; 80.1% in 1949; 85.8% in 1950; 90% in 1951; 92.9% in 1952; 94.9% in 1953; and 96.1% in 1954.

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TABLE [illegible] PRODUCTION AND REQUIREMENT AND RATIO OF PRODUCTION TO REQUIREMENT OF PRINCIPAL FOOD ITEMS 1950 AND 1954

ITEMS	1950			1954		
	Production	Requirements	Ratio of Production to Requirement	Production	Requirements	Ratio of Production to Requirement
	(M.Tons)	(M.Tons)	(Per Cent)	(M.Tons)	(M.Tons)	(Per Cent)
Rice, (rough)	2,618,200	2,864,600	91.4	3,110,900	3,074,000	101.2
Corn	576,400	676,500	85.2	725,900	725,900	100.0
Other cereals	---	125,500	0.0	---	134,700	0.0
Fruits and Nuts	377,400	302,000	125.0	408,500	324,000	127.0
Root crops	556,300	774,500	71.8	626,100	831,100	75.3
Beans and vegetables	62,100	96,100	64.6	70,900	103,100	68.8
Sugar	780,000	239,200	326.1	1,150,000	256,700	448.0
Coffee and Cacao	5,000	13,700	36.5	7,000	14,700	47.6
Peanut	10,500	4,600	228.3	12,000	5,000	240.0
Fish and fish products	258,186	221,600	116.5	385,437	237,800	163.0
Meat and poultry products	216,070	290,200	74.5	279,308	311,400	89.7
Milk and dairy products	6,499	94,100	6.9	10,170	101,000	10.1
TOTAL - - - -	5,466,655	5,702,600	95.9(a)	6,786,215	6,119,400	110.9(a)

(a) Excluding sugar, the over-all ratio of production to requirement will be 85.8% in 1950 and 96.1% in 1954.

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TABLE 5. ACTUAL AND PROJECTED AND REQUIREMENTS OF PRINCIPAL FOOD ITEMS AND RATIO OF PRODUCTION TO REQUIREMENTS 1940 AND 1946 TO 1954

Items	1940			1946		
	Actual Production (M.T.)	Requirements (M.T.)	Ratio of Production to Requirements (Per Cent)	Actual Production (M.T.)	Requirements (M.T.)	Ratio of Production to Requirements (Per Cent)
Rice, rough	2,362,746	2,422,708	97.5	1,623,330	2,655,300	61.1
Corn	572,185	572,196	100.0	331,260	627,000	52.8
Other cereals	—	105,941	0.0	—	116,300	0.0
Fruits and nuts	256,340	255,183	100.5	261,430	279,900	93.4
Root crops	615,026	625,088	98.3	434,100	717,900	60.5
Beans and vegetables	42,430	81,529	52.0	32,240	89,100	39.5
Sugar	997,067	201,680	494.4	62,640	221,700	28.3
Coffee and cacao	2,520	11,718	31.5	3,700	12,700	29.1
Peanut	6,530	3,902	167.4	3,040	4,300	70.7
Fish and fish products	170,000	187,246	90.8	49,560	205,400	24.1
Meat and poultry products	237,313	245,350	96.7	76,866	269,000	28.6
Milk & dairy products	9,330	80,104	11.6	4,188	87,200	4.8
Total	5,271,487	4,792,645	110.0 (a)	2,882,354	5,285,800	54.5 (a)
	1947			1948		
Rice, rough	2,088,240	2,707,600	77.1	2,240,850	2,760,000	81.2
Corn	472,190	639,400	73.9	519,010	651,700	79.6
Other cereals	—	118,600	0.0	—	120,900	0.0
Fruits and nuts	369,450	285,400	129.4	229,080	290,900	78.8
Root crops	460,220	732,000	62.9	524,340	746,200	70.3
Beans and vegetables	41,300	90,800	45.5	44,270	92,600	47.8
Sugar	119,070	226,100	52.9	395,740	230,500	171.7
Coffee and cacao	5,170	13,000	39.8	4,560	13,200	34.5
Peanut	5,080	4,400	115.5	7,400	4,450	166.3
Fish and fish products	211,450	209,400	101.0	195,078	213,500	91.4
Meat and poultry products	91,821	274,300	33.5	131,723	279,600	47.1
Milk and dairy products	4,543	89,000	5.1	5,226	90,700	5.8
Total	3,869,134	5,390,000	71.8 (a)	4,297,277	5,494,250	78.2 (a)

Items	1949			1950		
	Actual Production (M.T.)	Requirements (M.T.)	Ratio of Production to Requirements (Per Cent)	Actual Production (M.T.)	Requirements (M.T.)	Ratio of Production to Requirements (Per Cent)
Rice, rough	2,491,300	2,812,300	88.6	2,618,200	2,864,600	91.4
Corn	534,070	664,000	80.4	576,400	676,500	85.2
Other cereals	---	123,200	0.0	---	125,500	0.0
Fruits and nuts	269,750	296,400	91.0	377,400	302,000	125.0
Root crops	528,230	760,300	69.5	556,300	774,500	71.8
Beans and vegetables	59,680	94,300	63.3	62,100	96,100	64.6
Sugar	692,910	234,800	295.1	780,000	239,200	326.1
Coffee and cacao	4,460	13,500	33.0	5,000	13,700	36.5
Peanut	9,570	4,500	212.7	10,500	4,600	228.3
Fish and fish products	226,373	217,500	104.1	258,186	221,600	116.5
Meat and poultry products	165,060	284,900	57.9	216,070	290,200	74.5
Milk and dairy products	5,843	92,400	6.3	6,499	94,100	6.9
Total------	4,987,246	5,598,100	89.1 (a)	5,456,655	5,702,600	95.9 (a)
		1951			1952	
Rice, rough	2,794,500	2,917,000	95.8	2,927,700	2,969,300	98.6
Corn	644,700	688,800	93.6	690,000	701,200	98.4
Other cereals	---	127,800	0.0	---	130,000	0.0
Fruits and nuts	384,900	307,500	125.2	392,600	313,000	125.4
Root crops	573,000	788,600	72.7	590,200	802,800	73.5
Beans and vegetables	64,300	97,800	65.7	66,000	99,600	66.3
Sugar	870,000	243,600	357.1	950,000	247,900	383.2
Coffee and cacao	5,300	14,000	37.9	6,000	14,200	42.3
Peanut	11,000	4,700	234.0	11,600	4,800	239.6
Fish and fish products	289,998	225,600	128.5	321,811	229,700	140.1
Meat and poultry products	233,283	295,500	78.9	247,593	300,800	82.3
Milk and dairy products	7,271	95,800	7.6	8,131	97,600	8.3
Total------	5,878,252	5,806,700	101.2 (a)	6,211,535	5,910,900	105.1 (a)

Items	1953			1954		
	Actual Production (M.T.)	Requirements (M T.)	Ratio of Production to Requirements (Per Cent)	Actual Production (M.T.)	Requirements (M T.)	Ratio of Production to Requirements (Per Cent)
Rice, rough	3,033,700	3.021,600	100.4	3.110,900	3,074,000	101.2
Corn	713.500	713,500	100.0	725,900	725,900	100.0
Other cereals	—	132,400	0.0	—	134,700	0.0
Fruits & nuts	400,500	318,500	125.7	408,500	324,000	127.0
Root crops	607,900	816,900	74.4	626,100	831,100	75.3
Beans & vegetables	68,500	101,300	67.6	70,900	103,100	68.8
Sugar	1,050.000	252,300	416.2	1,150,000	256,700	448.0
Coffee & cacao	6,500	14,500	44.8	7,000	14,700	47.6
Peanuts	12,000	4,900	244.8	12,000	5,000	240.0
Fish & fish products	353.624	233.700	151.1	385,437	237,800	163.0
Meat & poultry products	262,909	306.100	85.9	279,308	311,400	89.7
Milk & dairy products	9,093	99,300	9.2	10,170	101,000	10.1
Total	6,518,226	6,015,000	108.4[(a)]	6,786.215	6,119,400	110.9[(a)]

(a) Excluding sugar, the only food item produced, 80 percent of which was exported before the war, the over-all ratio of our food production to requirement will be 93.1% in 1940; 55.7% in 1946; 72.6% in 1947; 74.1% in 1948; 80.1% in 1949; 85.8% in 1950; 90% in 1951; 92.9% in 1952; 94.9% in 1953; and 96.1% in 1954.

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February 1, 1950

TABLE 6. ACTUAL AREA, PRODUCTION AND REQUIREMENT OF PRINCIPAL FOOD ITEMS 1940 AND 1946 TO 1949. PROJECTED TARGETS, 1950 TO 1954 AND RATIO OF PRODUCTION TO REQUIREMENTS

Year	Rice (Rough)				Corn			
	Area (Has.)	Production (M. Tons)	Requirement (M.Tons)(a)	Ratio of Production to Requirement (Per Cent)	Area (Has.)	Production (M. Tons)	Requirement (M. Tons)(a)	Ratio of Production to Requirement (Per Cent)
1940	2,080,380	2,362,746	2,422,708	97.5	912,890	572,185	572,196	100.0
1946	1,649,960	1,623,330	2,655,300	61.1	571,090	331,260	627,000	52.8
1947	1,879,600	2,088,240	2,707,600	77.1	812,300	472,190	639,400	73.9
1948	2,026,380	2,240,850	2,760,000	81.2	826,490	519,010	651,700	79.6
1949	2,164,100	2,491,300	2,812,300	88.6	866,200	534,070	664,000	80.4
1950	2,215,000	2,618,200	2,864,600	91.4	902,000	576,400	676,500	85.2
1951	2,258,000	2,794,500	2,917,000	95.8	950,000	644,700	688,800	93.6
1952	2,306,000	2,927,700	2,969,300	98.6	967,700	690,000	701,200	98.4
1953	2,350,000	3,033,700	3,021,600	100.4	991,400	713,500	713,500	100.0
1954	2,380,000	3,110,900	3,074,000	101.2	1,018,900	725,900	725,900	100.0
	Other Cereals (b)				: Fruits and Nuts			
1940	---	---	105,941	---	201,440	256,340	255,183	100.5
1946	---	---	116,300	---	186,310	261,430	279,900	93.4
1947	---	---	118,600	---	199,350	369,450	285,400	129.4
1948	---	---	120,900	---	195,270	229,080	290,900	78.8
1949	---	---	123,200	---	203,000	269,750	296,400	91.0
1950	---	---	125,500	---	205,000	377,400	302,000	125.0
1951	---	---	127,800	---	208,000	384,900	307,500	125.2
1952	---	---	130,000	---	210,000	392,600	313,000	125.4
1953	---	---	132,400	---	212,000	400,500	318,500	125.7
1954	---	---	134,700	---	215,000	408,500	324,000	127.0

Year	Root Crops				Beans and Vegetables			
	Area (Has.)	Production (M.Tons)	Requirement (M.Tons)(a)	Ratio of Production to Requirement (Per Cent)	Area (Has.)	Production (M.Tons)	Requirement (M.Tons)(a)	Ratio of Production to Requirement (Per Cent)
1940	178,010	615,026	625,088	98.3	49,400	42,430	81,529	52.0
1946	148,340	434,100	717,900	60.5	30,040	38,240	89,100	39.5
1947	175,590	460,220	732,000	62.9	38,310	41,300	90,800	45.5
1948	164,410	524,340	746,200	70.3	39,490	44,270	92,600	47.8
1949	172,360	528,230	760,300	69.5	48,880	59,680	94,300	63.3
1950	173,500	556,300	774,500	71.8	52,000	62,100	96,100	64.6
1951	175,000	573,000	788,600	72.7	53,000	64,300	97,800	65.7
1952	176,500	590,200	802,800	73.5	54,000	66,000	99,600	66.3
1953	178,000	607,900	816,900	74.4	55,000	68,500	101,300	67.6
1954	180,000	626,100	831,100	75.3	56,000	70,900	103,100	68.8
	Coffee and Cacao				Peanut			
1940	8,650	2,520	11,718	31.5	12,170	6,530	3,902	167.4
1946	9,900	3,700	12,700	29.1	7,550	3,040	4,300	70.7
1947	13,630	5,170	13,000	39.8	11,080	5,080	4,400	115.5
1948	13,000	4,560	13,200	34.5	13,670	7,400	4,450	166.3
1949	13,160	4,460	13,500	33.0	18,600	9,570	4,500	212.7
1950	13,300	5,000	13,700	36.5	19,000	10,500	4,600	228.3
1951	13,400	5,300	14,000	37.9	19,800	11,000	4,700	234.0
1952	13,600	6,000	14,200	42.3	20,600	11,500	4,800	239.6
1953	13,800	6,500	14,500	44.8	21,500	12,000	4,900	244.8
1954	14,000	7,000	14,700	47.6	21,500	12,800	5,000	240.0

Year	Fish and Fish Products			Meat and Poultry Products		
	Production (M.Tons)	Requirement (M.Tons)	Ratio of Production to Requirement (Per Cent)	Production (M. Tons)	Requirement (M.Tons)	Ratio of Production to Requirement (Per Cent)
1940	170,000	187,246	90.8	237,313	245,350	96.7
1946	49,560	205,400	24.1	76,866	269,000	28.6
1947	211,450	209,400	101.1	91,821	274,300	33.5
1948	195,078	213,500	91.4	131,723	279,600	47.1
1949	226,373	217,500	104.1	165,060	284,900	57.9
1950	258,186	221,600	116.5	216,070	290,200	74.5
1951	289,998	225,600	128.5	233,283	295,500	78.9
1952	321,811	229,700	140.1	247,593	300,800	82.3
1953	353,624	233,700	151.3	262,909	306,100	85.9
1954	385,437	237,800	163.0	279,308	311,400	89.7

Year	Milk and Dairy Products			Sugar			
	Production (M.Tons)(a)	Requirement (M.Tons)(a	Ratio of Production to Requirement (Per Cent)	Area (Has.)	Production (M. Tons)	Requirement (M. Tons)	Ratio of Production to Requirement (Per Cent)
1940	9,330	80,104	11.6	229,700	997,067	201,680	494.4
1946	4,188	87,200	4.8	28,960	62,640	221,700	28.3
1947	4,543	89,000	5.1	40,990	119,670	226,100	52.9
1948	5,226	90,700	5.8	82,320	395,740	230,500	171.7
1949	5,843	92,400	6.3	128,960	692,910	234,800	295.1
1950	6,499	94,100	6.9	149,700	780,000	239,200	326.1
1951	7,271	95,800	7.6	167,200	870,000	243,600	357.1
1952	8,131	97,600	8.3	197,900	950,000	247,900	383.2
1953	9,093	99,300	9.2	210,000	1,050,000	252,300	416.2
1954	10,170	101,000	10.1	230,000	1,150,000	256,700	448.0

(a) Including the per cent allowance for seeds, feeds, etc.
(b) Includes wheat and wheat flour, etc.
(c) Estimated on the basis of the milk production in the 1939 census.
(d) Converted to fresh milk equivalent.

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TABLE 7. NORMAL PRODUCTION AND DISAPPEARANCE (CONSUMPTION) OF FOODSTUFFS IN THE PHILIPPINES (ESTIMATED FOR THE YEAR 1940)

Item	Production (M. Tons)	Importation (M. Tons)	Exports (M. Tons)	Disappearance (M. Tons)	Per Capita Disappearance (Kilos) (a)	Per Cent
Rice (Milled)	1,503,652	38,261	102	1,541,811	93.0(d)	30.9
Corn	572,185	11	-	572,196	34.5(d)	11.5
Other Cereals	-	106,180	239	105,941	6.4	2.1
Root Crops (b)	615,026	10,064	2	625,088	39.5 (e)	12.5
Sugar	997,067	1,680	797,067 (c)	201,680	12.2	4.0
Fish & Fish Products	170,000	18,926	1,680	187,246	11.3	3.8
Meat & Poultry Products	237,313	8,319	282	245,350	14.8	4.9
Vegetables (b)	42,430 (f)	39,333	234	81,529	4.9(e)	1.6
Fruits (b)	256,340	18,243	19,400	255,183	15.4 (e)	5.1
Coffee and Cacao (b)	2,520	10,004	806	11,718	0.7	0.2
Peanut (b)	6,530	666	3,294	3,902	0.2	0.1
Milk and Dairy Products	9,610	71,913 (g)	1,419 (g)	80,104	4.8	1.6
All Others (h)	1,080,611	1,867	-	1,082,478	65.3	21.7
Total	5,493,284	325,467	824,525	4,994,226	303.0	100.0

(a) Based on the 1940 population of 16,577,000.
(b) Census of 1939 (1938 production).
(c) Estimated exportable sugar for 1940 production.
(d) Including the per cent allowance for seeds, feeds, etc.
(e) No allowance deducted for feeds, wastes, etc.
(f) This estimate does not include vegetables from tree crops, vine crops and other green vegetables which are utilized in considerable amounts by farm population.
(g) Converted to fresh milk equivalent.
(h) Includes fats and oils and other crops produced and consumed by the consumer families in the rural areas not included in the other items.

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TABLE 8. ACTUAL AREA PLANTED TO PRINCIPAL CROPS, 1940 AND 1946 TO 1949 AND PROJECTED TARGETS FOR 1950 TO 1954

(In Hectares)

	Actual Area					Projected Targets				
	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Food Crops:										
Rice	2,080,380	1,649,960	1,879,600	2,026,380	2,164,100	2,215,000	2,258,000	2,306,000	2,350,000	2,380,000
Corn	912,890	571,090	812,300	826,490	866,200	902,000	950,000	967,700	991,400	1,018,900
Fruits and Nuts	201,440(a)	186,310	199,350	195,270	203,000	205,000	208,000	210,000	212,000	215,000
Root Crops	178,010(a)	148,340	175,590	164,410	172,360	173,500	175,000	176,500	178,000	180,000
Beans and Vegetables	49,400(a)	30,040	38,310	39,490	48,880	52,000	53,000	54,000	55,000	56,000
Coffee and Cacao	8,650(a)	9,900	13,630	13,000	13,160	13,300	13,400	13,600	13,800	14,000
Peanuts	12,170(a)	7,550	11,080	13,670	18,600	19,000	19,800	20,600	21,500	21,500
Sub-total	3,442,940	2,603,190	3,129,860	3,278,710	3,486,300	3,579,800	3,677,200	3,748,400	3,821,700	3,885,400
Technical Group:										
Coconut	1,051,210(a)	960,000	960,000	960,000	965,500	965,500	966,000	966,500	966,500	967,000
Sugar cane	229,700(a)	28,960	40,990	82,320	128,960	149,700	167,200	197,900	210,000	230,000
Abaca	291,530(a)	272,420	280,840	283,200	282,700	285,000	290,000	295,000	300,000	305,000
Tobacco	57,920(a)	27,080	33,000	33,680	38,740	42,000	45,000	50,000	55,000	60,000
Ramie	400	---	80	300	470	600	800	1,200	1,600	2,000
Sub-total	1,630,760	1,288,460	1,314,910	1,359,500	1,416,370	1,442,800	1,469,000	1,510,600	1,533,100	1,564,000
TOTAL	5,073,700	3,891,650	4,444,770	4,638,210	4,902,670	5,022,600	5,146,200	5,259,000	5,354,800	5,449,400

(a) 1939 Census

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TABLE 9. INDEX NUMBERS OF THE AREA PLANTED TO PRINCIPAL CROPS, ACTUAL 1946 TO 1949 AND PROJECTED TARGETS FOR 1950 TO 1954

(1940—100)

CROPS	ACTUAL				PROJECTED				
	1946	1947	1948	1949	1950	1951	1952	1953	1954
Food Crops	75.6	90.9	95.2	101.3	104.0	106.8	108.9	111.9	112.9
Rice	79.3	90.3	97.4	104.0	106.5	108.5	110.8	113.0	114.4
Corn	62.6	89.0	90.5	94.9	98.8	104.1	106.0	108.6	111.6
Fruits and Nuts	92.5	99.0	96.9	100.8	101.8	103.3	104.2	105.2	106.7
Root Crops	83.3	98.6	92.4	96.8	97.5	98.3	99.2	100.0	101.1
Beans and Vegetables	60.8	77.6	79.9	98.9	105.3	107.3	109.3	111.3	113.4
Coffee and Cacao	114.5	157.6	150.3	152.1	153.8	154.9	157.2	159.5	161.8
Peanut	62.2	91.0	112.3	152.8	156.1	162.7	169.3	176.7	176.7
Technical Crops:	79.0	80.6	83.4	86.9	88.5	91.0	92.6	94.0	96.0
Coconut	91.3	91.3	91.3	91.8	91.8	91.0	92.0	92.0	92.0
Sugar Cane	12.7	17.8	35.8	56.1	65.2	72.8	86.2	91.4	100.1
Abaca	93.4	96.3	97.1	97.0	97.8	99.5	101.2	102.9	104.6
Tobacco	46.8	57.0	58.1	66.9	72.5	77.7	86.3	95.0	103.6
Ramie	—	20.0	75.0	117.5	150.0	200.0	300.0	400.0	500.0
All Crops	76.7	87.6	91.4	96.6	99.0	101.4	103.7	105.5	107.4

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Table 10. ACTUAL PRODUCTION OF PRINCIPAL CROPS, 1940 AND 1946 TO 1949 AND PRODUCTION TARGETS FOR 1950 TO 1954

(In Metric Tons)

CROPS	ACTUAL PRODUCTION					PRODUCTION TARGETS				
	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Food Crops:										
Rice (rough)	2,362,746	1,623,330	2,088,240	2,240,850	2,491,300	2,618,200	2,794,500	2,927,700	3,033,700	3,110,900
Corn	572,185	331,260	472,190	519,010	534,070	576,400	644,700	690,000	713,500	725,900
Fruits and Nuts	256,340(a)	261,430	369,450	229,080	269,750	377,400	384,900	392,600	400,500	408,500
Root Crops	615,026(a)	434,100	460,220	524,340	528,230	556,300	573,000	590,200	607,900	626,100
Beans and Vegetables (b)	42,430(a)	32,240	41,300	44,270	59,680	62,100	64,300	66,000	68,500	70,900
Coffee and Cacao	2,520(a)	3,700	5,170	4,560	4,460	5,000	5,300	6,000	6,500	7,000
Peanut	6,530(a)	3,040	5,080	7,400	9,570	10,500	11,000	11,500	12,000	12,000
Sub-total	3,857,777	2,689,100	3,441,650	3,569,510	3,897,060	4,205,900	4,477,700	4,684,000	4,842,600	4,961,300
Technical Group:										
Copra (c)	738,474	203,810	998,140	882,780	698,120	703,500	710,500	714,000	717,600	721,200
Coconut Oil (Homemade)	3,000	—	3,330	3,390	2,980	3,300	3,500	3,600	3,700	3,900
Desiccated Coconut	40,518(d)	—	9,170	45,240	58,760	60,000	61,500	63,000	64,000	65,000
Sugar	997,067(e)	62,640	119,670	395,740	692,910	780,000	870,000	950,000	1,050,000	1,150,000
Abaca	172,343(f)	30,420	82,000	99,460	74,510	90,000	103,500	124,200	149,000	178,800
Tobacco	32,115(a)	14,330	17,660	17,290	21,920	24,200	26,600	30,600	35,200	40,500
Ramie	849(d)	—	140	70	50	800	1,600	2,500	3,400	4,400
Sub-total	1,984,366	311,200	1,230,110	1,443,970	1,549,250	1,661,800	1,777,200	1,887,900	2,022,900	2,163,800
TOTAL	5,842,143	3,000,300	4,671,760	5,013,480	5,446,310	5,867,700	6,254,900	6,571,900	6,865,500	7,125,100

(a) 1939 Census

(b) Excludes vegetables from tree crops, vine crops and other green vegetables.

(c) Copra production may be increased to 900,000 tons or more a year from 1950 to 1954 if the demand for it increases in the foreign markets at prices similar to that of 1947 and if the peace and order situation will improve.

(d) 1940 Export.

(e) Includes muscovado sugar and panocha.

(f) 1940 baling report of the Fiber Inspection Service.

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TABLE 11. PRODUCTION INDEX OF PRINCIPAL CROPS, ACTUAL 1946 TO 1949 AND PROJECTED TARGETS FOR 1950 TO 1954

(1940 — 100)

CROPS	ACTUAL				PROJECTED				
	1946	1947	1948	1949	1950	1951	1952	1953	1954
Food Crops:	69.7	89.2	92.5	101.0	109.0	116.1	121.4	125.5	128.6
Rice (rough)	68.7	88.4	94.8	105.4	110.8	118.3	123.9	128.4	131.7
Corn	57.9	82.5	90.7	93.3	110.7	112.7	120.6	124.7	126.9
Fruits and Nuts	102.0	144.1	89.4	105.2	147.2	150.2	153.2	156.2	159.4
Root Crops	70.6	74.8	85.3	85.9	90.5	93.2	96.0	98.8	101.8
Beans and Vegetables	76.0	97.3	104.3	140.7	146.4	151.5	155.6	161.4	167.1
Coffee and Cacao	146.8	205.2	181.0	177.0	198.4	210.3	238.1	258.0	277.8
Peanut	46.6	77.8	113.3	146.6	160.8	168.5	176.1	183.8	183.8
Technical Crops:	15.7	62.0	72.8	79.0	83.7	89.6	95.1	101.9	109.0
Copra	27.6	135.2	119.5	94.5	95.3	96.2	96.7	97.2	97.7
Coconut Oil (Home Made)	---	111.0	113.0	99.3	110.0	116.7	120.0	123.3	130.0
Desiccated Coconut	---	22.6	111.7	145.0	148.1	151.8	155.5	158.0	160.4
Sugar	6.3	12.9	39.7	69.5	78.2	87.3	95.3	105.3	115.3
Abaca	17.7	47.6	57.7	43.2	52.2	60.1	72.1	86.5	103.7
Tobacco	44.6	55.0	53.8	68.3	75.4	82.8	95.3	109.6	126.1
Ramie	---	16.5	8.2	5.9	94.2	188.5	294.5	400.5	518.3
All Crops	51.4	80.0	85.8	93.2	100.4	107.1	112.5	117.5	122.0

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Table 12. LIVESTOCK AND POULTRY PRODUCTION INCLUDING EGGS 1940 AND 1946 TO 1954 (a)

(In metric tons)

	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Carabaos	25,932	11,944	12,912	14,753	16,524	18,506	20,727	23,215	26,000	29,120
Cattle	40,491	12,862	14,108	17,786	19,475	21,325	23,351	25,570	27,999	30,659
Horses	1,820	802	843	971	1,069	1,175	1,293	1,422	1,565	1,721
Hogs	88,936	29,216	35,217	52,736	66,978	93,568	98,266	103,178	108,338	113,754
Goats	1,638	713	822	1,084	1,193	1,312	1,443	1,587	1,746	1,920
Sheep	132	63	69	85	90	96	102	108	115	122
Sub-total	158,949	55,600	63,971	87,415	105,329	135,982	145,182	153,080	165,763	177,296
Chickens	52,650	13,974	18,396	29,408	39,700	53,359	58,695	61,630	64,711	67,947
Ducks	420	198	237	344	450	572	630	661	694	729
Geese	12	8	9	11	12	13	14	15	16	17
Turkeys	135	57	60	72	93	112	128	141	155	171
Chicken Eggs	23,292	6,156	8,103	12,954	17,487	23,504	25,854	27,147	28,504	29,929
Duck Eggs	1,855	873	1,045	1,519	1,909	2,528	2,780	2,919	3,066	3,219
Sub-total	78,364	21,266	27,850	44,308	59,731	80,088	88,101	92,513	97,146	102,012
TOTAL	237,313	76,866	91,821	131,723	165,060	216,070	233,283	247,593	262,909	279,308

(a) To be distinguished from livestock and poultry population reported in separate table.

National Economic Council
January 10, 1950

TABLE 13. NUMBER OF LIVESTOCK AND POULTRY ACTUAL AS OF JANUARY 1, 1940 AND 1946 TO 1948 AND PROJECTED TARGETS FOR 1949 TO 1954 (a)

Item	ACTUAL NUMBER				PROJECTED TARGETS					
	1940(b)	1946	1947	1948	1949	1950	1951	1952	1953	1954
Livestock										
Carabaos	3,015,400	1,388,870	1,504,450	1,715,530	1,921,360	2,151,920	2,410,150	2,699,370	3,023,300	3,386,100
Cattle	1,396,260	443,530	485,620	613,270	671,560	735,360	805,220	881,720	965,480	1,057,200
Horses	343,500	151,260	157,390	183,290	201,630	221,790	243,970	268,370	295,210	324,730
Hogs	4,446,790	1,460,780	1,752,930	2,636,820	3,348,900	4,678,400	4,913,300	5,158,900	5,416,900	5,687,700
Goats	420,000	182,730	210,780	277,900	305,800	336,380	370,020	407,020	447,720	492,490
Sheep	40,000	19,030	20,620	25,950	27,560	29,210	30,970	32,830	34,790	36,880
Sub-total	9,661,950	3,646,200	4,131,790	5,452,760	6,476,810	8,153,060	8,773,630	9,44[illegible]210	10,183,400	10,985,100
Poultry										
Chickens	27,000,000	7,166,550	9,433,880	15,080,790	20,359,100	27,363,500	30,099,900	31,604,900	33,185,100	34,844,400
Ducks	700,000	329,610	394,370	573,070	750,700	953,900	1,049,300	1,101,800	1,156,900	1,214,700
Geese	30,000	19,890	22,560	28,020	31,100	31,800	33,300	34,900	36,700	38,500
Turkeys	45,000	19,150	20,280	23,860	31,100	37,200	42,800	47,100	51,800	57,000
Sub-total	27,775,000	7,535,200	9,871,090	15,705,740	21,171,900	28,386,400	31,225,300	32,788,700	34,430,500	36,154,600
TOTAL	37,436,950	11,181,400	14,002,880	21,158,500	27,648,710	36,539,460	39,998,930	42,236,910	44,613,900	47,139,700

(a) To be distinguished from livestock and poultry production given in another table.

(b) Goats, sheep and poultry for 1940 are estimated.

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TABLE 14. POPULATION INDEX OF LIVESTOCK AND POULTRY: ACTUAL AS OF JANUARY 1, 1946 TO 1948 AND PROJECTED, 1949 TO 1948 AND PROJECTED, 1949 TO 1954

(1940 = 100)

ITEM	ACTUAL			PROJECTED					
	1946	1947	1948	1949	1950	1951	1952	1953	1954
Livestock:-	37.7	42.8	56.4	67.0	84.4	90.8	97.8	105.4	113.7
Carabao	46.1	49.9	56.9	63.7	71.3	80.0	89.5	100.3	112.3
Cattle	31.8	34.8	43.9	48.1	52.7	57.7	63.1	69.1	75.7
Horses	44.0	45.8	53.4	58.7	64.6	71.0	78.0	85.9	94.5
Hogs	32.9	39.4	59.3	75.3	105.2	110.5	116.0	121.8	127.9
Goats	43.5	50.2	66.2	72.8	80.1	88.1	96.9	106.3	117.3
Sheep	47.6	51.6	64.9	68.9	73.0	77.4	83.0	87.0	92.2
Poultry:-	27.1	35.5	56.5	76.2	102.2	112.4	118.1	124.0	130.2
Chickens	26.5	34.9	55.9	75.4	101.3	111.5	117.1	122.9	129.1
Ducks	47.1	56.3	81.9	107.2	136.3	149.9	157.4	165.3	173.5
Geese	66.3	75.2	93.4	103.6	106.0	111.0	116.3	122.3	128.3
Turkeys	42.6	45.1	53.0	68.9	82.7	95.1	104.7	115.1	126.7
All Livestock and Poultry	29.9	37.4	56.5	73.9	97.6	106.8	112.8	119.2	125.9

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TABLE 15. NUMBER OF LIVESTOCK AND POULTRY CONVERTED TO CATTLE UNITS, ACTUAL NUMBER AS OF JANUARY 1, 1940 AND 1946 TO 1948 AND PROJECTED TARGETS FOR JANUARY 1, 1950 TO 1954

Item	Cattle Unit (a)	ACTUAL NUMBER				PROJECTED TARGETS					
		1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
Livestock:											
Carabaos	1.29	3,889,870	1,791,680	1,940,680	2,213,000	2,478,560	2,776,980	3,109,090	3,482,190	5,900,060	4,368,070
Cattle	1.00	1,396,260	443,500	485,600	613,300	671,560	735,360	805,220	981,720	965,490	1,057,200
Horses	0.85	291,980	128,610	133,790	153,810	171,390	188,620	207,370	228,110	250,930	276,020
Hogs	0.40	1,778,720	584,320	701,160	1,054,720	1,339,560	1,671,360	1,966,320	2,063,560	2,166,760	2,275,080
Goats	0.11	46,200	20,100	23,190	30,580	33,640	37,000	40,700	44,770	49,260	54,170
Sheep	0.09	3,600	1,170	1,850	2,340	2,480	2,630	2,790	2,950	3,130	3,320
Sub-total		7,406,630	2,969,920	3,286,270	4,069,750	4,697,190	5,610,850	6,130,490	6,703,300	6,335,610	8,033,860
Poultry:											
Chickens	0.01	270,000	71,670	94,340	150,810	203,590	273,640	301,000	316,050	331,850	348,440
Ducks	0.007	4,900	2,310	2,760	4,010	5,250	6,680	7,350	7,710	8,100	8,500
Geese	0.022	660	440	500	620	600	700	730	770	810	850
Turkeys	0.015	680	290	300	360	470	560	640	710	780	860
Sub-total		276,240	74,710	97,900	155,800	209,990	281,580	309,720	328,240	341,540	358,650
TOTAL		7,682,870	3,044,630	3,384,170	4,225,550	4,907,170	5,892,430	6,440,210	7,028,540	7,677,150	8,392,510

(a) Obtained by dividing the average dressed weight of each kind of livestock and poultry by the average dressed weight of cattle (110 kilos) considered as one unit.

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January 10, 1950.

Table 16. ACTUAL FISH PRODUCTION FOR 1940 AND FROM 1946 TO 1948 AND PROJECTED TARGETS FOR 1949 TO 1954

(In metric tons)

	ACTUAL PRODUCTION				PROJECTED TARGETS					
	1940	1946	1947	1948	1949	1950	1951	1952	1953	1954
TOTAL	170,000	49,560	211,450	195,078	226,373	258,186	289,998	321,811	353,624	385,437
1. Production of commercial fishing outfit	114,540	15,900	63,030	41,995	50,950	59,904	68,858	77,812	86,767	96,721
2. Production of fishponds	20,330	16,100	20,790	23,031	24,608	26,158	27,808	29,458	31,108	32,758
3. Production of municipal fisheries and sustenance fishing	35,130	17,560	127,630	130,052	150,915	172,124	193,332	214,541	235,749	256,958

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Table 17. INDEX OF FISH PRODUCTION, ACTUAL, 1946 TO 1948 AND PROJECTED TARGETS FOR 1949 TO 1954
(1940 = 100)

I T E M	ACTUAL PRODUCTION			PRODUCTION TARGETS					
	1946	1947	1948	1949	1950	1951	1952	1953	1954
Total Production	29.2	124.4	114.8	133.2	151.9	170.6	189.3	208.0	226.7
1. Production of commercial fishing outfit	13.9	55.0	36.7	44.5	52.3	60.1	67.9	75.8	83.6
2. Production of fish ponds	79.2	102.3	115.3	120.6	128.7	136.8	144.9	153.0	161.1
3. Production of municipal fisheries and sustenance fishing	60.0	383.3	370.2	429.6	490.0	550.3	610.7	671.1	731.4

National Economic Council
January 10, 1950.

TABLE 18. ACTUAL PRODUCTION OF TIMBER AND SAWN LUMBER, 1940 AND 1946 TO 1948 AND PROJECTED PRODUCTION AND EXPORT, 1949 TO 1954

(In 1,000 bd. ft.)

ITEM	ACTUAL PRODUCTION AND EXPORT				PROJECTED PRODUCTION AND EXPORT (a)					
	1940	1946	1947	1948	1949 (b)	1950	1951	1952	1953	1954
Production:-										
Timber	898,000	239,994	636,747	929.035	1.047,000	1,140,700	1,177,500	1,185,000	1,190,000	1,210,000
Lumber	352,910	108,122	273,127	404,487	492,000	513,300	530,000	545,000	547,400	556,000
Export:-										
Timber	131,227	---	4,208	15,493	15,000	20,000	25,000	35,000	45,000	60,000
Lumber	58,609	---	595	14,273	20,000	25,000	35,000	50,000	65,000	80,000
Domestic Consumption:- **(Lumber and Timber)**	708,164	239,994	631,944	899,269	1,012,000	1,095,700	1,117,500	1,100,000	1,080,000	1,070,000

(a) Projected production can be increased as the demand for export and for local consumption increases.
(b) Estimates based on several months data on lumber production and export for 1949.

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TABLE 19. PRODUCTION, EXPORT AND CONSUMPTION INDEX OF TIMBER AND LUMBER: ACTUAL FOR 1946 TO 1948 AND PROJECTED FOR 1949 TO 1954

(1940 = 100)

ITEM	ACTUAL PRODUCTION AND EXPORT			PROJECTED PRODUCTION AND EXPORT					
	1946	1947	1948	1949	1950	1951	1952	1953	1954
Production:-									
Timber	26.7	70.9	103.5	116.6	127.0	131.1	132.0	132.5	134.7
Lumber	32.5	82.0	121.5	147.8	154.2	159.2	163.7	163.7	167.0
Export:-									
Timber	-	3.2	11.8	11.4	15.2	19.1	26.7	34.3	45.7
Lumber	-	1.0	24.4	34.1	42.7	59.7	85.3	110.9	136.6
Domestic Consumption:- (Lumber and Timber)	33.9	89.2	127.0	142.9	154.7	157.8	155.3	152.5	151.1

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TABLE 20. DISTRIBUTION OF THE NATIONAL INCOME IN MILLIONS OF CURRENT PESOS AND IN PER CENT OF THE TOTAL FOR EACH YEAR

ITEMS	1938		1946		1947		1948	
	Pesos	Per cent	Pesos	Per cent	Pesos	Per cent	Pesos	Per cent
1. Agriculture	534	45.90	1,674	51.90	2,142	57.20	2,272	55.80
2. Forest products and building	60	5.20	60	1.80	96	2.60	101	2.50
3. Fisheries	60	5.10	194	6.00	200	5.30	257	6.30
4. Mining	72	6.20	6	.20	10	.30	40	1.00
5. Manufacturing not elsewhere included:	30	2.60	120	3.70	122	3.30	142	3.50
6. Value added to imported goods	137	11.80	331	10.30	460	12.30	527	13.00
7. Services not elsewhere included:								
(a) Restaurants, hotels, laundries, movies and other domestic and personal services	83	7.10	249	7.70	200	5.30	221	5.40
(b) Transportation and communication	38	3.30	54	1.70	90	2.40	98	2.40
(c) Professions	24	2.10	72	2.20	72	1.90	79	1.90
(d) Financial services	20	1.70	50	1.50	50	1.40	67	1.70
(e) Government and education	76	6.50	115	3.60	120	3.20	125	3.10
(f) Philippine Army	19	1.60	127	3.90	80	2.10	74	1.80
(g) Civilian services rendered USArmy	10	.90	176	5.50	100	2.70	66	1.60
Gross National Product	1,163	100.00	3,228	100.00	3,742	100.00	4,069	100.00
8. Minus Depreciation	169	14.50	469	14.50	371	9.90	407	10.00
Net National Product	994	85.50	2,759	85.50	3,371	90.10	3,662	90.00
9. Other Income	41	3.50	501	15.50	382	10.20	556	13.70
Total National Product & Income	1,035	89.00	3,260	101.00	3,753	100.30	4,218	103.70
10. Per Capita National Product and Income	65.46		177.78		199.82		219.29	

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TABLE 21. ANNUAL EXPENSES OF EXPERTS AND TRAINEES

Technical personnel in P. I. or abroad	Number	Peso Requirement					Dollar Requirement			
		Total	Per diems in P. I.	Trav. expenses in P. I.	Transp. to U.S.A.	Clothing allowance in U.S.A.	Salaries and Expenses	Clothing Allowance in U.S.A.	Transp. to P. I.	Total
Experts	11 (a)	125,730	88,330	16,500	16,500 (c)	4,400	66,000 (e)	- -	8,250 c/	74,250
Trainees	30 (b)	31,500	---	---	22,500	9,000 (d)	105,000	3,000 (f)	11,250	119,250
TOTAL		157,230	88,330	16,500	39,000	13,400	171,000	3,000	19,500	193,500

FIVE-YEAR EXPENSES OF EXPERTS AND TRAINEES: GRAND TOTAL	544,230	544,230	544,230	544,230	544,230	2,721,150
(Pesos)	157,230	157,230	157,230	157,230	157,230	786,150
(Dollars)	193,500	193,500	193,500	193,500	193,500	967,500
1. Experts (Pesos)	125,730	125,730	125,730	125,730	125,730	628,650
(Dollars)	74,250	74,250	74,250	74,250	74,250	371,250
2. Trainees (Pesos)	31,500	31,500	31,500	31,500	31,500	157,500
(Dollars)	119,250	119,250	119,250	119,250	119,250	596,250

(a) Mining experts not included.

(b) Mining trainees not included.

(c) Plane accommodations at the rate of $1,500 round trip for each.

(d) Clothing allowance in the Philippines at ₱300 each.

(e) Salaries of 11 agricultural experts from abroad at an average rate of $6,000 a year for each to be paid by their respective governments.

(f) Clothing allowance in the United States at ₱100 each.

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Table 22-A. SUMMARY OF THE FIVE YEAR (1950-1954) CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES

(In Thousands)

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All others
GRAND TOTAL (Pesos)	401,493	36,260	177,535	29,655	128,074	29,969
Peso requirement	235,537	30,400	55,365	25,405	93,398	27,969
Dollar requirement	82,978	2,930	61,085	2,125	15,838	1,000
Rice and Corn (Pesos)	71,808	4,400	25,000	1,900	33,824	6,684
Peso requirement	45,570	3,944	6,224	1,820	27,136	6,446
Dollar requirement	13,119	228	9,388	40	3,344	119
Coconut (Pesos)	58,000	5,350	28,350	50	18,300	5,950
Peso requirement	47,400	4,922.8	18,547.2	50	18,090	5,790
Dollar requirement	5,300	213.6	4,901.4	—	105	80
Sugar (Pesos)	62,000	3,800	25,300	2,000	24,100	6,800
Peso requirement	12,900	1,836	—	1,550	3,594	5,920
Dollar requirement	24,550	982	12,650	225	10,253	440

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
Abaca (Pesos)	61,760	1,400	33,320	550	24,600	1,890
Peso requirement	49,020	1,209.6	20,930044	550	24,480	1,850
Dollar requirement	6,370	95.2	6,194.8	—	60	20
Tobacco (Pesos)	14,430	1,900	5,800	900	5,580	250
Peso requirement	11,150	1,680	3,010	900	5,340	220
Dollar requirement	1,640	110	1,395	—	120	15
Ramie (Pesos)	8,500	1,130	3,520	200	3,600	50
Peso requirement	2,550	720	10	110	1,670	40
Dollar requirement	2,975	205	1,755	45	965	5
Fruits & Nuts (Pesos)	8,400	250	1,900	370	5,770	110
Peso requirement	7,800	210	1,514	370	5,596	110
Dollar requirement	300	20	193	—	87	—
Beans & Vegetables (Pesos)	7,120	290	950	450	5,370	60
Peso requirement	5,340	226	40	430	4,580	44
Dollar requirement	890	32	455	—	395	8
Root crops (Pesos)	2,290	130	530	200	1,370	60
Peso requirement	2,290	130	530	200	1,370	60
Dollar requirement	—	—	—	—	—	—

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All others
Coffee & Cacao (Pesos)	580	80	275	—	210	15
Peso requirement	540	80	235	—	210	15
Dollar requirement	20	—	20	—	—	—
Peanuts (Pesos)	8,000	330	3,150	490	3,950	80
Peso requirement	3,920	178	140	450	3,092	60
Dollar requirement	2,040	76	1,505	20	429	10
Fisheries (Pesos)	15,470	1,500	6,700	—	250	7,020
Peso requirement	7,970	1,020	256	—	210	6,484
Dollar requirement	3,750	240	3,222	—	20	268
Livestock (Pesos)	27,995	2,800	1,300	22,545	900	450
Peso requirement	23,545	2,530	1,060	18,955	780	220
Dollar requirement	2,125	135	120	1,795	60	15
Forestry (Pesos)	55,340	12,900	41,440	—	250	750
Peso requirement	15,542	11,713.6	2,868.4	—	250	710
Dollar requirement	19,899	593.2	19,285.8	—	—	20

TABLE 22-B. REQUIRED CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES, 1950-1954

FIRST YEAR (1950)

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
GRAND TOTAL (Pesos)	93,810,000	11,490,000	45,628,000	6,844,000	21,940,000	7,908,000
Peso requirement	47,490,000	9,910,000	7,672,000	5,844,000	16,556,000	7,508,000
Dollar requirement	23,160,000	790,000	18,978,000	500,000	2,692,000	200,000
Rice and Corn	19,984,000	2,000,000	8,000.000	200,000	7,500,000	2,284,000
Peso requirement	6,670,000	1,764,000	—	160,000	5,512,000	2,234,000
Dollar requirement	5,157,000	118,000	4,000,000	20,000	994,000	25,000
Coconut (Pesos)	10,000,000	950,000	5,500,000	—	2,000,000	1,550,000
Peso requirement	7,400,000	840,800	3,099,200	—	1,950,000	1,510,000
Dollar requirement	1,300,000	54,600	1,200,400	—	25,000	20,000
Sugar (Pesos)	15,000,000	1,500,000	7,000,000	700,000	4,000,000	1,800,000
Peso requirement	4,100,000	896,000	—	600,000	1,004,000	1,600,000
Dollar requirement	5,450,000	302,000	3,500,000	50,000	1,498,000	100,000
Abaca (Pesos)	9,760,000	400,000	5,020,000	100,000	4,000,000	240,000
Peso requirement	5,760,000	349,600	1,090,400	100,000	3,980,000	240,000
Dollar requirement	2,000,000	25,200	1,964,800	—	10,000	—

FIRST YEAR (1950) Cont'd.

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilisers, insecticides, biologics and other supplies	All Others
Tobacco (Pesos)	2,730,000	400,000	1,500,000	100,000	680,000	50,000
Peso requirement	2,050,000	380,000	880,000	100,000	640,000	50,000
Dollar requirement	340,000	10,000	310,000	---	20,000	--
Ramie (Pesos)	1,000,000	180,000	610,000	10,000	200,000	--
Peso requirement	300,000	160,000	--	10,000	130,000	--
Dollar requirement	350,000	10,000	305,000	--	35,000	--
Fruits & Nuts (Pesos)	1,400,000	100,000	300,000	150,000	800,000	50,000
Peso requirement	1,300,000	90,000	240,000	150,000	770,000	50,000
Dollar requirement	50,000	5,000	30,000	--	15,000	--
Beans & Vegetable (Pesos)	3,120,000	200,000	550,000	350,000	2,020,000	--
Peso requirement	2,340,000	160,000	--	350,000	1,830,000	--
Dollar requirement	390,000	20,000	275,000	--	95,000	--
Root Crops (Pesos)	340,000	50,000	130,000	100,000	60,000	--
Peso requirement	340,000	50,000	130,000	100,000	60,000	--
Dollar requirement .	--	--	--	--	--	--
Coffee & Cacao (Pesos)	90,000	10,000	50,000	--	30,000	--
Peso requirement	84,000	10,000	44,000	--	30,000	--
Dollar requirement	3,000	--	3,000	--	--	--

FIRST YEAR (1950) Cont'd.

I t e m s	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
Peanut (Pesos)	1,000,000	100,000	600,000	50,000	250,000	—
Peso requirement	400,000	60,000	40,000	50,000	250,000	—
Dollar requirement	300,000	20,000	280,000	—	—	—
Fisheries (Pesos)	3,084,000	400,000	1,300,000	—	50,000	1,334,000
Peso requirement	1,584,000	300,000	—	—	50,000	1,234,000
Dollar requirement	750,000	50,000	650,000	—	—	50,000
Livestock (Pesos)	7,034,000	1,000,000	600,000	5,084,000	300,000	50,000
Peso requirement	6,034,000	920,000	550,000	4,224,000	300,000	40,000
Dollar requirement	500,000	40,000	25,000	430,000	—	500
Forestry (Pesos)	19,268,000	4,200,000	14,468,000	—	50,000	550,000
Peso requirement	6,128,000	3,929,600	1,598,400	—	50,000	550,000
Dollar requirement	6,570,000	135,200	6,434,800	—	—	—

TABLE 22-B. REQUIRED CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES, 1950 -- 1954 (SECOND YEAR (1951)

ITEMS	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilisers, insecticides, biologies and other supplies	All Others
GRAND TOTAL (Pesos)	84,294,000	8,355,000	35,635,000	7,239,000	27,125,000	5,940,000
Peso requirement	49,310,000	7,125,000	9,933,000	6,239,000	20,473,000	5,540,000
Dollar requirement	17,492,000	615,000	12,851,000	500,000	3,326,000	200,000
Rice and Corn (Pesos)	14,790,000	800,000	5,000,000	600,000	7,290,000	1,100,000
Peso requirement	9,480,000	700,000	1,584,000	560,000	5,590,000	1,046,000
Dollar requirement	2,655,000	50,000	1,708,900	20,000	850,000	27,000
Coconut (Pesos)	11,000,000	1,200,000	5,200,000	—	3,500,000	1,100,000
Peso requirement	8,800,000	1,102,000	3,178,000	—	3,460,000	1,060,000
Dollar requirement	1,100,000	49,000	1,011,000	—	20,000	20,000
Sugar (Pesos)	14,500,000	800,000	6,000,000	500,000	5,500,000	1,700,000
Peso requirement	4,100,000	520,000	—	440,000	1,620,000	1,520,000
Dollar requirement	5,200,000	140,000	3,000,000	30,000	1,940,000	90,000
Abaca (Pesos)	13,000,000	300,000	7,050,000	100,000	5,200,000	350,000
Peso requirement	9,600,000	260,000	3,750,000	100,000	5,160,000	330,000
Dollar requirement	1,700,000	20,000	1,650,000	—	20,000	10,000

SECOND YEAR (1951) Cont'd.

I t e m	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, proceasing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and Other supplies	All Others
Tobacco (Pesos)	2,925,000	400,000	1,075,000	200,000	1,200,000	50,000
Peso requirement	2,275,000	360,000	555,000	200,000	1,120,000	40,000
Dollar requirement	325,000	20,000	260,000	—	40,000	5,000
Ramie (Pesos)	1,500,000	250,000	640,000	10,000	600,000	—
Peso requirement	450,000	190,000	—	10,000	250,000	—
Dollar requirement	525,000	30,000	320,000	—	175,000	—
Fruits & Nuts (Pesos)	2,100,000	50,000	400,000	130,000	1,500,000	20,000
Peso requirement	1,950,000	40,000	300,000	130,000	1,460,000	20,000
Dollar requirement	75,000	5,000	50,000	—	20,000	—
Beans & vegetables(pesos)	1,000,000	25,000	100,000	30,000	825,000	20,000
Peso requirement	750,000	23,000	20,000	30,000	663,000	14,000
Dollar requirement	125,000	1,000	40,000	—	81,000	3,000
Root Crops (Pesos)	450,000	20,000	100,000	20,000	290,000	20,000
Peso requirement	450,000	20,000	100,000	20,000	290,000	20,000
Dollar requirement	—	—	—	—	—	—

SECOND YEAR (1951) Cont'd.

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and Other supplies	All Others
Coffee & Cacao (Pesos)	70,000	10,000	40,000	—	20,000	—
Peso requirement	66,000	10,000	36,000	—	20,000	—
Dollar requirement	2,000	—	2,000	—	—	—
Peanut (Pesos)	1,500,000	100,000	530,000	50,000	800,000	20,000
Peso requirement	580,000	60,000	—	50,000	460,000	10,000
Dollar requirement	460,000	20,000	265,000	—	170,000	5,000
Fisheries (Pesos)	3,410,000	400,000	1,500,000	—	50,000	1,460,000
Peso requirement	1,910,000	320,000	130,000	—	50,000	1,410,000
Dollar requirement	750,000	40,000	685,000	—	—	25,000
Livestock (Pesos)	7,049,000	800,000	300,000	5,599,000	300,000	50,000
Peso requirement	6,049,000	750,000	280,000	4,699,000	280,000	40,000
Dollar requirement	500,000	25,000	10,000	450,000	10,000	5,000
Forestry (Pesos)	11,000,000	3,200,000	7,700,000	—	50,000	50,000
Peso requirement	2,850,000	2,770,000	—	—	50,000	30,000
Dollar requirement	4,075,000	215,000	3,850,000	—	—	10,000

Table 22-B. REQUIRED CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES, 1950 — 1954

THIRD YEAR (1952)

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics, and other supplies	All others
GRAND TOTAL (Pesos)	78,776,000	6,795,000	35,111,000	5,338,000	25,629,000	5,903,000
Peso requirement	46,922,000	5,623,000	11,913,000	4,588,000	19,295,000	5,503,000
Dollar requirement	15,927,000	586,000	11,599,000	375,000	3,167,000	200,000
Rice and Corn (Pesos)	13,034,000	600,000	4,000,000	300,000	7,034,000	1,100,000
Peso requirement	8,810,000	560,000	910,000	300,000	5,994,000	1,046,000
Dollar requirement	2,112,000	20,000	1,545,000	—	520,000	27,000
Coconut (Pesos)	12,000,000	1,400,000	5,700,000	—	3,800,000	1,100,000
Peso requirement	9,800,000	1,260,000	3,720,000	—	3,760,000	1,060,000
Dollar requirement	1,100,000	70,000	990,000	—	20,000	20,000
Sugar (Pesos)	12,500,000	600,000	5,100,000	300,000	4,800,000	1,700,000
Peso requirement	2,500,000	200,000	—	250,000	530,000	1,520,000
Dollar requirement	5,000,000	200,000	2,550,000	25,000	2,135,000	90,000
Abaca (Pesos)	13,000,000	300,000	7,200,000	100,000	5,000,000	400,000
Peso requirement	10,900,000	260,000	5,180,000	100,000	4,980,000	380,000
Dollar requirement	1,050,000	20,000	1,010,000	—	10,000	10,000

THIRD YEAR (1952) Con'td.

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, Processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilisers, insecticides, biologics, and other supplies	All Others
Tobacco (Pesos)	2,925,000	400,000	1,075,000	200,000	1,200,000	50,000
Peso requirement	2,275,000	300,000	575,000	200,000	1,160,000	40,000
Dollar requirement	325,000	50,000	250,000	---	20,000	5,000
Ramie (Pesos)	1,500,000	250,000	630,000	10,000	600,000	10,000
Peso requirement	450,000	150,000	---	10,000	280,000	10,000
Dollar requirement	525,000	50,000	315,000	---	160,000	---
Fruits and Nuts (Pesos)	1,400,000	30,000	400,000	20,000	940,000	10,000
Peso requirement	1,500,000	20,000	354,000	20,000	896,000	10,000
Dollar requirement	50,000	5,000	23,000	---	22,000	---
Beans and Vegetables (Pesos)	1,000,000	25,000	100,000	30,000	825,000	20,000
Peso requirement	750,000	15,000	---	30,000	695,000	10,000
Dollar requirement	125,000	5,000	50,000	---	65,000	5,000
Root Crops (Pesos)	450,000	20,000	100,000	20,000	290,000	20,000
Peso requirement	450,000	20,000	100,000	20,000	290,000	20,000
Dollar requirement	---	---	---	---	---	---
Coffee & Cacao (Pesos)	140,000	20,000	75,000	---	40,000	5,000
Peso requirement	130,000	20,000	65,000	---	40,000	5,000
Dollar requirement	5,000	---	5,000	---	---	---

THIRD YEAR (1952)

I t e m s	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilisers, insecticides, biologics and other supplies	All Others
Peanut (Pesos)	1,500,000	50,000	400,000	130,000	900,000	20,000
Peso requirement	580,000	10,000	---	90,000	470,000	10,000
Dollar requirement	460,000	20,000	200,000	20,000	215,000	5,000
Fisheries (Pesos)	3,218,000	300,000	1,500,000	---	50,000	1,368,000
Peso requirement	1,718,000	220,000	126,000	---	50,000	1,322,000
Dollar requirement	750,000	40,000	687,000	---	---	23,000
Livestock (Pesos)	5,178,000	600,000	200,000	4,228,000	100,000	50,000
Peso requirement	4,428,000	540,000	180,000	3,568,000	100,000	40,000
Dollar requirement	375,000	30,000	10,000	330,000	---	5,000
Forestry (Pesos)	10,931,000	2,200,000	8,631,000	---	50,000	50,000
Peso requirement	2,831,000	2,048,000	703,000	---	50,000	30,000
Dollar requirement	4,050,000	76,000	3,964,000	---	---	10,000

TABLE 22-B. REQUIRED CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES, 1950 - 1954
FOURTH YEAR (1953)

I T E M S	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All other
GRAND TOTAL (Pesos)	73,781,000	5,581,000	31,552,000	5,145,000	25,740,000	5,764,000
Peso requirement	46,149,000	4,584,000	12,464,000	4,395,000	19,342,000	5,364,000
Dollar requirement	13,816,000	498,000	9,544,000	375,000	3,199,000	200,000
Rice and Corn (Pesos)	12,000,000	500,000	4,000,000	400,000	6,000,000	1,100,000
Peso requirement	8,790,000	450,000	2,040,000	400,000	4,840,000	1,060,000
Dollar requirement	1,605,000	25,000	980,000	—	580,000	20,000
Coconut (Pesos)	12,000,000	1,000,000	5,400,000	—	4,500,000	1,100,000
Peso requirement	10,200,000	940,000	3,720,000	—	4,460,000	1,000,000
Dollar requirement	900,000	30,000	840,000	—	20,000	10,000
Sugar (Pesos)	11,000,000	500,000	4,000,000	300,000	4,800,000	1,400,000
Peso requirement	2,000,000	300,000	—	220,000	440,000	1,240,000
Dollar requirement	4,500,000	200,000	2,000,000	40,000	2,180,000	80,000
Abaca (Pesos)	13,600,000	800,000	7,150,000	200,000	5,000,000	450,000
Peso requirement	11,200,000	160,000	5,410,000	200,000	4,980,000	450,000
Dollar requirement	900,000	20,000	870,000	—	10,000	—
Tobacco (Pesos)	2,925,000	400,000	1,075,000	200,000	1,200,000	50,000
Peso requirement	2,275,000	360,000	505,000	200,000	1,160,000	50,000
Dollar requirement	325,000	20,000	285,000	—	20,000	—

FOURTH YEAR (1953) Cont'd.

I t e m s	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilisers, insecticides, biologics and other supplies	All Others
Ramie (Pesos)	2,000,000	250,000	770,000	60,000	900,000	20,000
Peso requirement	600,000	140,000	—	30,000	410,000	20,000
Dollar requirement	700,000	55,000	385,000	15,000	245,000	---
Fruits and Nuts (Pesos)	1,400,000	30,000	400,000	20,000	940,000	10,000
Peso requirement	1,300,000	30,000	340,000	20,000	900,000	10,000
Dollar requirement	50,000	—	30,000	—	20,000	—
Beans & Vegetables (Pesos)	1,000,000	20,000	100,000	20,000	850,000	10,000
Peso requirement	750,000	18,000	20,000	20,000	682,000	10,000
Dollar requirement	125,000	1,000	40,000	—	84,000	—
Root Crops (Pesos)	450,000	20,000	100,000	30,000	290,000	10,000
Peso requirement	450,000	20,000	100,000	30,000	290,000	10,000
Dollar requirement	—	—	—	—	—	—
Coffee and Cacao (Pesos)	140,000	20,000	55,000	---	60,000	5,000
Peso requirement	130,000	20,000	45,000	—	60,000	5,000
Dollar requirement	5,000	—	5,000	—	—	---
Peanut (Pesos)	2,000,000	40,000	810,000	130,000	1,000,000	20,000
Peso requirement	1,160,000	20,000	50,000	130,000	940,000	20,000
Dollar requirement	420,000	10,000	380,000	---	30,000	—

FOURTH YEAR (1953) Cont'd.

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of Work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
Fisheries (Pesos)	2,939,000	200,000	1,200,000	—	50,000	1,489,000
Peso requirement	1,439,000	100,000	—	—	30,000	1,309,000
Dollar requirement	750,000	50,000	600,000	—	10,000	90,000
Livestock (Pesos)	4,235,000	200,000	100,000	3,785,000	100,000	50,000
Peso requirement	3,485,000	160,000	30,000	3,145,000	100,000	50,000
Dollar requirement	375,000	20,000	35,000	320,000	—	—
Forestry (Pesos)	8,692,000	2,200,000	6,392,000	—	50,000	50,000
Peso requirement	2,370,000	2,066,000	204,000	—	50,000	50,000
Dollar requirement	3,161,000	67,000	3,094,000	—	—	—

TABLE 22-B. REQUIRED CAPITAL INVESTMENTS FOR THE DEVELOPMENT OF AGRICULTURAL INDUSTRIES, 1950--1954

FIFTH YEAR (1954)

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and Other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticide, biologics and other supplies	All Others
GRAND TOTAL (Pesos)	70,832,000	4,040,000	29,609,000	5,089,000	27,640,000	4,454,000
Peso requirement	45,666,000	3,158,000	13,383,000	4,339,000	20,732,000	4,054,000
Dollar requirement	12,583,000	441,000	8,113,000	375,000	3,454,000	200,000
Rice and Corn (Pesos)	12,000,000	500,000	4,000,000	400,000	6,000,000	1,100,000
Peso requirement	8,820,000	470,000	1,690,000	400,000	5,200,000	1,060,000
Dollar requirement	1,590,000	15,000	1,155,000	—	400,000	20,000
Coconut (Pesos)	13,000,000	800,000	6,550,000	50,000	4,500,000	1,100,000
Peso requirement	11,200,000	780,000	4,830,000	50,000	4,460,000	1,080,000
Dollar requirement	900,000	10,000	860,000	—	20,000	10,000
Sugar (Pesos)	9,000,000	400,000	1,200,000	200,000	5,000,000	200,000
Peso requirement	200,000	120,000	—	40,000	—	40,000
Dollar requirement	4,400, 000	140,000	1,600,000	80,000	2,500,000	80,000
Abaca (Pesos)	13,000,000	200,000	6,900,000	50,000	5,400,000	450,000
Peso requirement	11,560,000	180,000	5,500,000	50,000	5,380,000	450,000
Dollar requirement	720,000	10,000	700,000	—	10,000	—

FIFTH YEAR (1954) Cont'd.

Items	Total	Purchase of land, construction of buildings, roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
Tobacco (Pesos)	2,925,000	300,000	1,075,000	200,000	1,300,000	50,000
Peso requirement	2,275,000	280,000	495,000	200,000	1,260,000	40,000
Dollar requirement	325,000	10,000	290,000	—	20,000	5,000
Ramie (Pesos)	2,500,000	200,000	870,000	110,000	1,300,000	20,000
Peso requirement	750,000	80,000	10,000	50,000	600,000	10,000
Dollar requirement	875,000	60,000	430,000	30,000	350,000	5,000
Fruits and Nuts (Pesos)	2,100,000	40,000	400,000	50,000	1,590,000	20,000
Peso requirement	1,950,000	30,000	280,000	50,000	1,570,000	20,000
Dollar requirement	75,000	5,000	60,000	—	10,000	—
Beans and Vegetables (Pesos)	1,000,000	20,000	100,000	20,000	850,000	10,000
Peso requirement	750,000	10,000	—	20,000	710,000	10,000
Dollar requirement	125,000	5,000	50,000	—	70,000	—
Root Crops (Pesos)	600,000	20,000	100,000	30,000	440,000	10,000
Peso requirement	600,000	20,000	100,000	30,000	440,000	10,000
Dollar requirement	—	—	—	—	—	—

FIFTH YEAR (1954) Cont'd.

I t e m s	Total	Purchase of land, construction of buildings roads, etc.	Purchase of agricultural machinery, implements, transportation, processing and other equipment	Purchase of work animals and other livestock	Purchase of seeds, fertilizers, insecticides, biologics and other supplies	All Others
Coffee and Cacao(Pesos)	140,000	20,000	55,000	—	60,000	5,000
Peso requirement	130,000	20,000	45,000	—	60,000	5,000
Dollar requirement	5,000	—	5,000	—	—	—
Peanut (Pesos)	2,000,000	40,000	810,000	130,000	1,000,000	20,000
Peso requirement	1,200,000	28,000	50,000	130,000	972,000	20,000
Dollar requirement	400,000	6,000	380,000	—	14,000	—
Fisheries (Pesos)	2,819,000	200,000	1,200,000	—	50,000	1,369,000
Peso requirement	1,319,000	80,000	—	—	30,000	1,209,000
Dollar requirement	750,000	60,000	600,000	—	10,000	80,000
Livestock (Pesos)	4,299,000	200,000	100,000	3,649,000	100,000	50,000
Peso requirement	3,549,000	160,000	20,000	3,319,000	—	50,000
Dollar requirement	375,000	20,000	40,000	265,000	50,000	—
Forestry (Pesos)	5,449,000	1,100,000	4,249,000	—	50,000	50,000
Peso requirement	1,363,000	900,000	363,000	—	50,000	50,000
Dollar requirement	2,043,000	100,000	1,943,000	—	—	—

National Economic Council

February 1, 1950

TABLE 23-A. SUMMARY OF THE REQUIRED OUTLAYS FOR ESSENTIAL GOVERNMENT SERVICES IN AGRICULTURE, 1950 - 1954

	GRAND TOTAL	CAPITAL INVESTMENT						OPERATING EXPENSES			
		Total	Purchases of Land, Construction of Buildings, Roads, etc.	Purch. of Agricultural Mach.: Implements: Transportation, Processing & Other Equipment	Purchase of Work Animals and other Livestock	Purchase of seeds, Fertilizers, insecticides, Biologics & other Supplies	All Others	Total	Salaries and Wages	Sundries	All Others
Grand Total (Pesos)	150,115,000	13,160,000	4,385,000	1,702,000	2,775,350	---	4,297,650	136,955,000	94,878,980	30,325,000	11,751,020
Peso Requirement	137,525,000	6,230,000	3,505,000	340,400	125,390	---	2,259,250	131,295,000	94,878,980	27,365,000	9,051,020
Dollar requirement	6,295,000	3,465,000	440,000	680,800	1,325,000	—	1,019,200	2,830,000	---	1,480,000	1,350,000
1950 (Total)	30,792,000	2,660,000	1,072,000	223,000	455,000	---	910,000	28,132,000	18,403,600	6,285,400	3,443,000
Peso Requirement	28,132,000	1,400,000	908,200	53,000	14,000	---	424,800	26,732,000	18,403,600	5,605,400	2,723,000
Dollar requirement	1,330,000	630,000	81,900	85,000	220,500	---	242,600	700,000	—	340,000	360,000
1951 (Total)	29,676,000	2,440,000	964,000	501,000	345,000	---	630,000	27,236,000	18,948,120	5,664,500	2,623,380
Peso requirement	27,806,000	1,550,000	861,300	82,600	96,900	---	509,200	26,256,000	18,948,120	5,144,500	2,163,380
Dollar requirement	935,000	445,000	51,350	209,200	124,050	---	60,400	490,000	---	260,000	230,000
1952 (Total)	30,259,000	3,760,000	1,099,000	481,000	1,258,460	---	921,540	26,499,000	18,666,600	5,912,000	1,920,400
Peso requirement	26,499,000	1,240,000	771,400	40,200	13,560	---	414,840	25,259,000	18,666,600	5,512,000	1,380,400
Dollar requirement	1,880,000	1,260,000	163,800	220,400	622,450	---	253,350	620,000	---	350,000	270,000
1953 (Total)	29,848,000	2,600,000	1,079,000	241,000	186,890	---	1,093,110	27,248,000	19,227,660	6,134,300	1,886,040
Peso requirement	27,248,000	1,200,000	897,000	48,200	890	---	253,910	26,048,000	19,227,660	5,494,300	1,326,040
Dollar requirement	1,300,000	700,000	91,000	96,400	93,000	---	419,600	600,000	---	320,000	280,000
1954 (Total)	29,540,000	1,700,000	171,000	256,000	530,000	---	743,000	27,840,000	19,633,000	6,328,800	1,878,200
Peso requirement	27,840,000	840,000	67,100	116,400	-.-	---	656,500	27,000,000	19,633,000	5,908,800	1,458,200
Dollar requirement	850,000	430,000	51,950	69,800	265,000	---	43,250	420,000	—	210,000	210,000

National Economic Council
February 23, 1950

TABLE 23-B. REQUIRED OUTLAYS FOR ESSENTIAL GOVERNMENT SERVICES IN AGRICULTURE, 1950--1954
FIRST YEAR (1950)

	GRAND TOTAL	CAPITAL INVESTMENTS						OPERATING EXPENSES			
		Total	Purchase of Land, Construction of Buildings, Roads, etc.	Purch. of Agricultural Mach. Implements, Transp. Processing & Equipmt	Purchase of Work Animals & other livestocks	Purchase of Seeds, Fertilizers, insecticides, Biologics & Other Supplies (1)	All Others	Total	Salaries and Wages	Sundries	All Others
T o t a l	30,792,000	2,660,000	1,072,000	223,000	455,000	—	910,000	28,132,000	18,401,600	6,285,400	3,443,000
Agricultural Extension	2,140,000	40,000	—	—	—	—	40,000	2,100,000	1,800,000	200,000	100,000
Central Experiment Station and Office of Research Coordinator	3,500,000	580,000	320,000	—	60,000	—	200,000	2,920,000	1,600,000	800,000	520,000
Plant Research and Regulatory Work - Bu. of Plant Industry	6,290,000	300,000	125,000	—	5,000	—	170,000	5,990,000	3,500,000	1,850,000	640,000
Bureau of Animal Industry	4,770,000	1,200,000	600,000	10,000	390,000	—	200,000	3,570,000	1,550,000	1,250,000	770,000
Soil Survey & Soil Conservation	570,000	120,000	—	—	—	—	120,000	450,000	320,000	118,000	12,000
Public Land Administration	8,730,000	80,000	—	—	—	—	80,000	8,650,000	7,800,000	800,000	50,000
Bureau of Forestry	2,760,000	220,000	7,000	213,000	—	—	—	2,540,000	900,000	840,000	800,000
Bureau of Fisheries	1,920,000	120,000	20,000	—	—	—	100,000	1,800,000	900,000	400,000	500,0[illegible]
Division of Agricultural Economics	112,000	—	—	—	—	—	—	112,000	33,600	27,400	51,000

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(1) Accounted for under Sundries.

SECOND YEAR (1951)

	GRAND TOTAL	CAPITAL INVESTMENTS						OPERATING EXPENSES			
		Total	Purchase of Land Construction of Buildings, Roads, etc	Purchase of Agricultural Machinery Implements, Transportation, Processing & other Equipment	Purchase of Work Animals and Other Livestock	Purchase of Seeds, Fertilizers, insecticides, Biologics & Other Supplies	All Others	Total	Salaries & Wages	Sundries	All Others
Total	29,676,000	2,440,000	964,000	501,000	545,000		630,000	27,236,000	18,948,120	5,664,500	2,683,580
Agricultural Extension	2.170,000	40,000	-	-	-	-	40,000	2,130,000	1,827,000	203,000	100,000
Central Experiment Station and Office of Research Coordinator	3,500,000	220,000	90,000	-	30,000	-	100,000	3,280,000	1,898,000	800,000	582,000
Plant Research and Regulatory Work - Bureau of Plant Industry	5,180,000	280,000	90,000	-	-	-	170,000	4,900,000	5,500,000	1,060,000	340,000
Bureau of Animal Industry	5,350,000	1,180,000	760,000	5,000	515,000	-	100,000	4,170,000	1,700,000	1,630,000	880,000
Soil Survey and Conservation	560,000	60,000	-	-	-	-	60,000	500,000	346,000	144,000	10,000
Public Land Administration	8,730,000	60,000	-	-	-	-	60,000	8,670,000	7,820,000	800,000	50,000
Bureau of Forestry	2,500,000	500,000	4,000	496,000	-	-	-	2,000,000	900,000	600,000	500,000
Bureau of Fisheries	1,590,000	120,000	20,000	-	-	-	100,000	1,470,000	900,000	400,000	170,000
Division of Agricultural Economics	116,000	-	-	-	-	-	-	116,000	57,120	27,500	51,580
					Third Year (1952)						
Total	30,259,000	3,760,000	1,099,000	481,000	1,258,460	-	921,540	26,499,000	18,668,600	5,912,000	1,920,400
Agricultural Extension	2,200,000	40,000	-	-	-	-	40,000	2,160,000	1,837,000	223,000	100,000
Central Experiment Station and Office of Research Coordinator	3,000,000	220,000	90,000	-	5,000	-	125,000	2,780,000	1,455,900	814,200	509,900
Plant Research and Regulatory Work - Bureau of Plant Industry	4,960,000	240,000	75,000	-	-	-	165,000	4,720,000	3,500,000	1,080,000	160,000
Bureau of Animal Industry	6,320,000	2,550,000	910,000	5,000	1,253,460	-	381,540	3,760,000	1,700,000	1,640,000	420,000
Soil Survey and Conservation	590,000	60,000	-	-	-	-	60,000	530,000	378,000	146,000	6,000
Public Land Administration	8,730,000	40,000	-	-	-	-	40,000	8,690,000	7,840,000	810,000	40,000
Bureau of Forestry	2,570,000	480,000	4,000	476,000	-	-	-	2,090,000	990,000	600,000	500,000
Bureau of Fisheries	1,780,000	120,000	20,000	-	-	-	100,000	1,660,000	900,000	590,000	170,000
Division of Agricultural Economics	109,000	-	-	-	-	-	-	109,000	67,700	28,800	12,500

FOURTH YEAR (1953)

	GRAND TOTAL	CAPITAL INVESTMENTS						OPERATING EXPENSES			
		Total	Purchase of Land Construction of Buildings, Roads, etc.	Purchase of Agricultural Machinery Implements, Transportation, Processing & Other Equipment	Purchase of Work Animals and Other Livestock	Purchase of Seeds, Fertilizers, insecticides, Biologics & Other Supplies	All Others	Total	Salaries & Wages	Sundries	All Others
Total	29,848,000	2,600,000	1,079,000	241,000	186,890	-	1,095,110	27,248,000	19,227,660	6,134,300	1,886,040
Agricultural Extension	2,230,000	40,000	-	-	-	-	40,000	2,190,000	1,845,000	245,000	100,000
Central Experiment Station and Office of Research Coordinator	2,970,000	180,000	70,000	-	-	-	110,000	2,790,000	1,455,900	762,700	571,400
Plant Research and Regulatory Work - Bureau of Plant Industry	4,970,000	200,000	45,000	-	-	-	155,000	4,770,000	3,600,000	1,060,000	110,000
Bureau of Animal Industry	5,870,000	1,760,000	940,000	5,000	186,890	-	628,110	4,110,000	2,000,000	1,700,000	410,000
Soil Survey and Conservation	610,000	40,000	-	-	-	-	40,000	570,000	388,000	174,000	8,000
Public Land Administration	8,720,000	20,000	-	-	-	-	20,000	8,700,000	7,860,000	810,000	30,000
Bureau of Forestry	2,310,000	240,000	4,000	236,000	-	-	-	2,070,000	990,000	600,000	480,000
Bureau of Fisheries	2,060,000	120,000	20,000	-	-	-	100,000	1,940,000	1,020,000	750,000	170,000
Division of Agricultural Economics	108,000	-	-	-	-	-	-	108,000	68,760	32,600	6,640
					Fifth Year (1954)						
Total	29,540,000	1,700,000	171,000	256,000	530,000	-	743,000	27,840,000	19,633,000	6,328,800	1,878,200
Agricultural Extension	2,230,000	40.000	-	-	-	-	40,000	2,190,000	1,845,000	245,000	100,000
Central Experiment Station and Office of Research Coordinator	3,000,000	200,000	70,000	-	20,000	-	110,000	2,800,000	1,470,640	774,200	555,160
Plant Research and Regulatory Work - Bureau of Plant Industry	5,080,000	180,000	57,000	-	5,000	-	118,000	4,900,000	3,700,000	1,070,000	130,000
Bureau of Animal Industry	5,100,000	860,000	20,000	-	505,000	-	335,000	4,240,000	2,000,000	1,840,000	400,000
Soil Survey and Conservation	570,000	20,000	-	-	-	-	20,000	550,000	388,000	157,000	5,000
Public Land Administration	8,720,000	20,000	-	-	-	-	20,000	8,700,000	7,860,000	810,000	30,000
Bureau of Forestry	2,550,000	260,000	4,000	256,000	-	-	-	2,290,000	1,210,000	600,000	480,000
Bureau of Fisheries	2,180,000	120,000	20,000	-	-	-	100,000	2,060,000	1,090,000	800,000	170,000
Division of Agricultural Economics	110,000	-	-	-	-	-	-	110,000	69,360	32,600	8,040

TABLE 24-A. SUMMARY OF TOTAL OPERATING EXPENSES FOR EXPERTS AND TRAINEES

Year	Total	Salaries	Sundries	All Others
GRAND TOTAL (Pesos)	2,725,000	660,000	1,150,000	915,000
Peso requirement	785,000	-	70,000	715,000
Dollar requirement	970,000	330,000	540,000	100,000
1950 (total)	545,000	132,000	230,000	183,000
Peso requirement	157,000	-	14,000	143,000
Dollar requirement	194,000	66,000	108,000	20,000
1951 (total)	545,000	132,000	230,000	183,000
Peso requirement	157,000	-	14,000	143,000
Dollar requirement	194,000	66,000	108,000	20,000
1952 (total)	545,000	132,000	230,000	183,000
Peso requirement	157,000	-	14,000	143,000
Dollar requirement	194,000	66,000	108,000	20,000
1953 (total)	545,000	132,000	230,000	183,000
Peso requirement	157,000	-	14,000	143,000
Dollar requirement	194,000	66,000	108,000	20,000
1954 (total)	545,000	132,000	230,000	183,000
Peso requirement	157,000	-	14,000	143,000
Dollar requirement	194,000	66,000	108,000	20,000

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TABLE 24-B. REQUIRED OPERATING EXPENSES FOR EXPERTS AND TRAINEES, 1950 - 1954

Year	EXPERTS					TRAINEES			
	Grand total	Total	Salaries	Sundries (Clothing allowance and other expenses)	All Others (Per diems, travelling, and transportation expense)	Total	Salaries	Sundries (Clothing allowance and other expenses)	All Others (Per diems, and traveling and transportation expenses)
GRAND TOTAL (Pesos)	2,725,000	1,375,000	660,000	25,000	690,000	1,350,000	-	1,125,000	225,000
Peso requirement	785,000	635,000	-	25,000	610,000	150,000	-	45,000	105,000
Dollar requirement	970,000	370,000	330,000	-	40,000	600,000	-	540,000	60,000
1950 (total)	545,000	275,000	132,000	5,000	138,000	270,000	-	225,000	45,000
Peso requirement	157,000	127,000	-	5,000	122,000	30,000	-	9,000	21,000
Dollar requirement	194,000	74,000	66,000	-	8,000	120,000	-	108,000	12,000
1951 (total)	545,000	275,000	132,000	5,000	138,000	270,000	-	225,000	45,000
Peso requirement	157,000	127,000	-	5,000	122,000	30,000	-	9,000	21,000
Dollar requirement	194,000	74,000	66,000	-	8,000	120,000	-	108,000	12,000
1952 (total)	545,000	275,000	132,000	5,000	138,000	270,000	-	225,000	45,000
Peso requirement	157,000	127,000	-	5,000	122,000	30,000	-	9,000	21,000
Dollar requirement	194,000	74,000	66,000	-	8,000	120,000	-	108,000	12,000
1953 (total)	545,000	275,000	132,000	5,000	138,000	270,000	-	225,000	45,000
Peso requirement	157,000	127,000	-	5,000	122,000	30,000	-	9,000	21,000
Dollar requirement	194,000	74,000	66,000	-	8,000	120,000	-	108,000	12,000
1954 (total)	545,000	275,000	132,000	5,000	138,000	270,000	-	225,000	45,000
Peso requirement	157,000	127,000	-	5,000	122,000	30,000	-	9,000	21,000
Dollar requirement	194,000	74,000	66,000	-	8,000	120,000	-	108,000	12,000

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TABLE 25. REQUIRED OUTLAYS FOR THE AGRICULTURAL PROGRAM

(In thousands)

	Total	1950	1951	1952	1953	1954
GRAND TOTAL	554,333	125,147	114,515	109,580	104,174	100,917
Peso requirement	373,847	75,779	77,273	73,578	73,554	73,663
Dollar requirement	90,243	24,684	18,621	18,001	15,310	13,627
For development of agricultural industries	401,493	93,810	84,294	78,776	73,781	70,832
Peso requirement	235,537	47,490	49,310	46,922	46,149	45,666
Dollar requirement	82,978	23,160	17,492	15,927	13,816	12,583
Rice and Corn (1)	71,808	19,984	14,790	13,034	12,000	12,000
Peso requirement	45,570	9,670	9,480	8,810	8,790	8,820
Dollar requirement	13,119	5,157	2,655	2,112	1,605	1,590
Coconut	58,000	10,000	11,000	12,000	12,000	13,000
Peso requirement	47,400	7,400	8,800	9,800	10,200	11,200
Dollar requirement	5,300	1,300	1,100	1,100	900	900
Sugar	62,000	15,000	14,500	12,500	11,000	9,000
Peso requirement	12,900	4,100	4,100	2,500	2,000	200
Dollar requirement	24,550	5,450	5,200	5,000	4,500	4,400
Abaca	61,760	9,760	13,000	13,000	13,000	13,000
Peso requirement	49,020	5,760	9,600	10,900	11,200	11,560
Dollar requirement	6,370	2,000	1,700	1,050	900	720
Tobacco	14,430	2,730	2,925	2,925	2,925	2,925
Peso requirement	11,150	2,050	2,275	2,275	2,275	2,275
Dollar requirement	1,640	340	325	325	325	325
Ramie	8,500	1,000	1,500	1,500	2,000	2,500
Peso requirement	2,550	300	450	450	600	750
Dollar requirement	2,975	350	525	525	700	875
Fruits and nuts	8,400	1,400	2,100	1,400	1,400	2,100
Peso requirement	7,800	1,300	1,950	1,300	1,300	1,950
Dollar requirement	300	50	75	50	50	75

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(1) Including Tractor Pools

	Total	1950	1951	1952	1953	1954
Beans & vegetables	7,120	3,120	1,000	1,000	1,000	1,000
Peso requirement	5,340	2,340	750	750	750	750
Dollar requirement	890	390	125	125	125	125
Root crops	2,290	340	450	450	450	600
Peso requirement	2,290	340	450	450	450	600
Dollar requirement	nil	nil	nil	nil	nil	nil
Coffee and Cacao	580	90	70	140	140	140
Peso requirement	540	84	66	130	130	130
Dollar requirement	20	3	2	5	5	5
Peanut	8,000	1,000	1,500	1,500	2,000	2,000
Peso requirement	3,920	400	580	580	1,160	1,200
Dollar requirement	2,040	300	460	460	420	400
Fisheries	15,470	3,084	3,410	3,218	2,939	2,819
Peso requirement	7,970	1,584	1,910	1,718	1,439	1,319
Dollar requirement	3,750	750	750	750	750	750
Livestock	27,795	7,034	7,049	5,178	4,235	4,299
Peso requirement	23,545	6,034	6,049	4,428	3,485	3,549
Dollar requirement	2,125	500	500	375	375	375
Forestry	55,340	19,268	11,000	10,931	8,692	5,449
Peso requirement	15,542	6,128	2,850	2,831	2,370	1,363
Dollar requirement	19,899	6,570	4,075	4,050	3,161	2,043
II. For Essential Government Services in Agriculture (Total)	150,115	30,792	29,676	30,259	29,848	29,540
Peso requirement	137,525	28,132	27,806	26,499	27,248	27,840
Dollar requirement	6,295	1,330	935	1,880	1,300	850
Agricultural extension (To be created)	10,970	2,140	2,170	2,200	2,230	2,230
Peso requirement	10,770	2,100	2,130	2,160	2,190	2,190
Dollar requirement	100	20	20	20	20	20
Central Experiment Station & Office of Research Coordination	15,970	3,500	3,500	3,000	2,970	3,000
Peso requirement	14,570	2,920	3,280	2,780	2,790	2,800
Dollar requirement	700	290	110	110	90	100
Plant Research & Regulatory Work - Bureau of Plant Industry	26,460	6,290	5,160	4,960	4,970	5,080
Peso requirement	25,280	5,990	4,900	4,720	4,770	4,900
Dollar requirement	590	150	130	120	100	90

Items	Total	1950	1951	1952	1953	1954
Bureau of Animal Industry	27,410	4,770	5,350	6,320	5,870	5,100
Peso requirement	19,850	3,570	4,170	3,760	4,110	4,240
Dollar requirement	3,780	600	590	1 280	880	430
Soil Survey and Conservation	2,900	570	560	590	610	570
Peso requirement	2,600	450	500	530	570	550
Dollar requirement	150	60	30	30	20	10
Public Lands Administration	43,630	8,730	8,730	8,730	8,720	8,720
Peso requirement	43,420	8,650	8,670	8,690	8,700	8,700
Dollar requirement	110	40	30	20	10	10
Bureau of Forestry	12,690	2,760	2,500	2,570	2,310	2,550
Peso requirement	10,990	2,540	2,000	2,090	2,070	2,290
Dollar requirement	850	110	250	240	120	130
Bureau of Fisheries	9,530	1,920	1,590	1,780	2,060	2,180
Peso requirement	8,930	1,800	1,470	1,660	1,940	2,060
Dollar requirement	300	60	60	60	60	60
Division of Agricultural Economics	555	112	116	109	108	110
Peso requirement	555	112	116	109	108	110
Dollar requirement	0	0	0	0	0	0
III **For Experts and Trainees (Total)**	2,725	545	545	545	545	545
Peso requirement	785	157	157	157	157	157
Dollar requirement	970	194	194	194	194	194
For experts to come to P. I. (1)	1,375	275	275	275	275	275
Peso requirement	635	127	127	127	127	127
Dollar requirement	370	74	74	74	74	74
Trainees to be sent abroad	1,350	270	270	270	270	270
Peso requirement	150	30	30	30	30	30
Dollar requirement	600	120	120	120	120	120

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(1) Based on maximum requirement of eleven agricultural experts from the U.S. every year and the sending of thirty (30) Filipino trainees to the U.S. every year for five years.

National Economic Council
February 24, 1950.

June 12, 1950

MEMORANDUM for
Honorable Jose Yulo
Chairman, Philippine Survey Commission

The attached report on "Agricultural Research and Experimentation" recommending the coordination of all agricutural research and the creation of an office of research coordination in the Department of Agriculture and Natural Resources, was prepared by the Technical Staff of the National Economic Council and passed upon by the Board of Directors of the Philippine Association of Agriculturists.

This recommendation is in accordance with the program of agricultural development as submitted by the Technical Staff of the National Economic Council.

Very respectfully,

(Sgd.) AMANDO M. DALISAY
Executive Secretary

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AGRICULTURAL RESEARCH AND EXPERIMENTATION

I. THE PROBLEM

The present work in agricultural research and experimentation requires both expansion and coordination. Expansion, because of the limited facilities in our institutions undertaking agricultural and related research and the inadequacy of the personnel now engaged in research. Coordination, because of the unrelated aspects of the research work being undertaken by some fourteen government agencies which are under the supervision of different departments or offices of the national government, and which can effectively contribute in the implementation of a program of national development only by the close correlation and coordination of their activities.

The following bureaus or organizations are engaged in agricultural research of one form or another:

1. Bureau of Animal Industry 2. Bureau of Plant Industry 3. Bureau of Forestry 4. Soil Survey and Conservation Division	Under the Dept. of Agriculture and Natural Resources
5. College of Agriculture 6. College of Veterinary Science 7. College of Pharmacy 8. College of Liberal Arts	Under the University of the Philippines
9. National Coconut Corporation 10. National Tobacco Corporation 11. National Abaca and other Fibers Corporation 12. Rice and Corn Production Administration	Formerly under the Government Enterprises; now under the Dept. of Economic Coordination
13. Institute of Science 14. National Museum 15. Private Entities a. Sugar Planters b. Sugar Centrals	Under the Office of the President

The above government agencies are not fully equipped to undertake effective research. In fact, there are only a few of them that are now conducting research and experimentation on some aspects of agriculture; these are the College of Agriculture at Los Baños and the Bureaus of Plant Industry, Animal Industry, and the Soil Survey and Conservation Division of the Department of Agriculture. Even the work of these institutions have to be coordinated to avoid unnecessary duplication and to make effective use especially at this time of limited available funds.

Under an integrated program of national economic development in which the rehabilitation and development of agriculture will play a leading role, the necessity of undertaking continuous and coordinated research and experiments on vital agricultural problems can not be over-emphasized. Improvement of technology, especially under local conditions and needs, will have to be studied by competent men who are familiar with Philippine agriculture. We need to face in a scientific and deliberate manner such problems as control of plant pests and diseases, introduction of new varieties, particularly of disease-and pest-resistant varieties, the proper use of fertilizers and insecticides, the control of irrigation water and the proper methods of its use, and the adaptation of mechanized equipment to local farming conditions. All these will have to be undertaken gradually, even if slowly, and we have to start now. We can not postpone work on research and experimentation without prejudice to the interests of agriculture and without setting back our agricultural development.

II. AVAILABLE FACILITIES FOR AGRICULTURAL RESEARCH WORK

The facilities for research work in the Department of Agriculture and Natural Resources have not been rehabilitated to their prewar condition. It is estimated that only about 10 percent of the laboratory and field equipment are now available for effective work.

In the College of Agriculture at Los Baños, nearly all of the buildings in the dairy operating department have been rebuilt with funds provided by the United States-Philippine War Damage Commission. Laboratory equipment have been restored to about 60 percent of prewar. Farm implements, including tractors, breeds of livestock and plant materials necessary for instructional purposes have been acquired but these are far from adequate for agricultural research work. The College of Agriculture library which was destroyed during the war has only started to acquire new books and publications for its reference files, and many important items are still lacking; it will require greater financial support to strengthen its facilities that are indispensable to effective research. The field work in plant improvement and in animal improvement has made very slow progress because of the pitifully small labor force which does not permit proper operation and supervision of field cultures and animal projects. (See Appendices A and B)

In view of the foregoing, it is extremely desirable that the research facilities at the College of Agriculture be improved and expanded. Likewise, the facilities for the various bureaus of the Department of Agriculture and Natural Resources, particularly of the Bureau of Animal Industry and Bureau of Plant Industry, should be expanded so as to permit basic research work demanded by the most important and urgent problems in agricultural production and development.

For the expansion of research facilities in the College of Agriculture and of the bureaus under the Department of Agriculture and Natural Resources, it is estimated that ₱2 million will be needed, of which about ₱1.5 million will have to be made available during the first year for laboratory facilities and for operating expenses, and the balance to be allocated among research agencies as the importance or priority of the research projects would warrant assistance by way of materials or personnel. For the College of Agriculture, it is conservatively estimated that ₱1,870,000 will be needed to put the experiment station plant on an operating basis, of which about ₱500,000 will be needed for the first year for the purchase of laboratory and field equipment, and of livestock and work animals; about ₱300,000 will be needed for operating expenses each year, including the salaries of technical workers and adminstrative personnel. For the Bureaus of Plant Industry and Animal Industry about ₱500,000 may be allocated each for the purchase of equipment and supplies and for operating expenses during the first year. In the succeeding years, allocation from the annual outlay of ₱1 million will be made on the basis of the projects to be undertaken according to an agreed priority.

III. OFFICE OF COORDINATION OF AGRICULTURAL RESEARCH

In order to effectuate the correlation and coordination of the various research activities in agriculture, it is essential that an office of research coordination be established with a Director or Coordinator of Agricultural Research. It is felt that what is urgently needed at this time is not centralized control of agricultural research activities under one department or agency of the Government, but the coordination of the research work now being undertaken by separate bureaus and offices. It does not seem practical to put directly under one control, the multifarious research activities in the various agencies, but even granted that research centralization is desirable, it may not be feasible to undertake at this time. The greatest stumbling block in its realization would be, as it has always been, the unwillingness of the heads of the various entities involved to lose any of the functions or activities presently under their control. For instance, it is observed that one of the strongest arguments against the proposal of the prewar Government Survey Board to centralize the agricultural research activities of the various bureaus and the College of Agriculture was that control over the centralized activities was to be removed entirely from the entities mentioned. However, there is every reason to believe that no research administrator or research technician would be against coordination of his research activities with those of others provided that such coordination is to the advantage of the common effort and will redound to the economic advancement of the country as a whole.

The main problem is the determination of the government entity or agency which will assume full responsibility for the coordination of agricultural research and experimentation. Ideally, it would be desirable to place the office of agricultural research coordination under the Department of Agriculture, knowing fully well that the final responsibility for agricultural development rests with the Secretary of Agriculture and Natural Resources. Practically, the work of adjusting the various problems in agricultural development with the various sectors of the national economy rests with the Department of Agriculture. It is quite obvious that the work of research coordination should be placed under the Secretary of Agriculture and Natural Resources.

It is therefore recommended that the work of coordinating agricultural research should reside in an office under the Secretary of Agriculture and Natural Resources, to be headed by an agricultural research coordinator (see appendix C). The coordinator shall be assisted by a board of research consultants composed of one representative each from the bureaus, colleges, corporations, or private entities undertaking agricultural research work. Initially, only four government instrumentalities will be involved in this coordination, namely: Bureau of Plant Industry, Bureau of Animal Industry, Division of Soil Survey and Conservation, and College of Agriculture. Later on, all the research agencies should be placed under the jurisdiction of this office. The office of agricultural research coordinator shall be provided with the necessary office staff, equipment, and facilities.

IV. POLICY PROPOSALS

In view of the foregoing, the following policy recommendations are presented for consideration:

1. The work in agricultural research and experimentation now being undertaken by some fourteen government bureaus and entities and by private organizations should be coordinated by one government agency,

and their facilities be improved and expanded. This is indispensable and crucial at this time for the promotion of agricultural development and for the strengthening of the public and private activities concerned therewith.

2. In order to carry out more effectively and much more economically the essential activities necessary for coordinated research and experimentation in agriculture, it is respectfully recommended that an office of agricultural research coordination be established. It is suggested that the office of agricultural research coordination be placed under the supervision and control of the Secretary of Agriculture and Natural Resources.

3. It is also recommended that the research functions and activities now being undertaken by the various government bureaus and entities be allowed to continue without any interruption and without any of the separate agencies being absorbed by other entities, although it is extremely desirable that the activities for any given year be coordinated with the programs and measures adopted by the national government in accordance with the national program of economic development.

4. For the carrying out of the initial work towards the expansion of our research activities and the improvement of presently available facilities at the College of Agriculture and in the bureaus under the Department of Agriculture and Natural Resources, it is hereby recommended that the sum of ₱2 million be made available both for the purchase of additional facilities and for the salaries and wages of additional technical and administrative personnel.

APPENDIX "A"

UNIVERSITY OF THE PHILIPPINES
College of Agriculture
College, Laguna, Philippines

March 15, 1950

Dr. Amando M. Dalisay
Executive Secretary
National Economic Council
Malacañan, Manila

Dear Doctor Dalisay:

I am sorry I could not submit to you at an earlier date the information you requested in connection with the proposed establishment of a central experiment station of the College of Agriculture. I had to enlist the cooperation of various members of the College faculty to supply the data required for the various technical departments, and it took sometime before these data could be brought together and correlated.

The information attached hereto is broken down into four groups to correspond with the headings listed in your letter. In this connection, I might add that research activities will fall short of the effective usefulness they are intended for if the program is not accompanied by means whereby the pertinent data and information gathered by the researchers in due course reach the farmers. I am, of course, aware of the government's program to strengthen its extension service, for which it will be necessary to train an adequate number of agricultural extension workers. To accomplish this end, the existing training facilities for extension workers in the College of Agriculture should be expanded. This will require an additional appropriation of ₱15,000 for personnel in the Department of Agricultural Education.

Very sincerely yours,

(Sgd) **L. B. UICHANCO**
Dean

Copy:

1. Present facilities of the College.

Facilities extent at present in the College of Agriculture, as at present organized include ten technical departments, namely, agricultural botany; agricultural chemistry; agricultural economics, agricultural education; agricultural engineering, including mathematics and physics; agronomy, including horticulture; animal husbandry, including poultry; entomology, including zoology; plant pathology, including agricultural bacteriology; and soils. Thanks to the aid given by the U.S.-Philippine War Damage Commission nearly all of these departments whose buildings had been destroyed as a result of the war have since been provided with new quarters, which are equal to or superior to those available to them prior to the war. Laboratory equipments have been about 60 percent restored, farm implements, including tractors were acquired, breeds of livestock re-established, and plant material representing the more important strains of major crops were secured. The United States Department of Agriculture, American Library Association, and many other American entities and private individuals have been most generous in helping restore the reference library. However, a good many important items are still lacking and with the present resources available it will not be possible to strengthen this essential tool of research to an effective level for many years. Reference collections in botany, entomology, zoology, plant pathology and agronomy are being re-established, but here again the work has been slow on account of lack of essential material and facilities. The labor force has always been pitifully small so that existing field cultures could only be partly attended to and many important new projects can not be undertaken. The same remarks will hold true in connection with the work in animal husbandry.

The grounds of the College of Agriculture comprise an area of approximately 400 hectares of diversified land, about 200 of which consist of the College farm, 150, pasture, and the rest, the campus proper. The College farm consists of rolling land on which all major crops of the Philippines can be grown. By an Act of the Philippine Legislature on February 15, 1918, appropriating the sum of ₱125,000, the agricultural experiment station at the College of Agriculture was created. The greatest portion of this appropriation was spent in acquiring the land which at present constitutes the larger part of the College grounds. However, since then no further appropriation was voted for this experiment station, so that although research work has been conducted by the College Staff, this activity has been done out of funds primarily for instructional purposes. Since 1929, the College has maintained a Limnological Station at the barrio of Mayondon on a piece of ground it had acquired on the foreshore of Laguna de Bay. Although the building of this station was saved, all the facilities for fresh-water life were lost in the last war and have been only very partially restored.

The College is within short walking distance of Mt. Maquiling, with its rich assemblage of plant and animal life. Because of the activity of previous workers, notably E. B. Copeland, C. F. Baker, H. M. Curran, and a number of others, this area is biologically the best known in the scientific world of all the Philippine localities. The College has on its staff a force of 58 faculty members, the preponderant number of which have had advanced training in their respective lines of agriculture in the Philippines as well as abroad, particularly in American universities. Many of them have been in the service of this institution for some 30 to 35 years and are quite well and favorably known among their fellow workers as a result of their research activities. This research output has been produced over a period of years and scientific papers continue to be published, despite the fact that nearly all the faculty members who produced them are rather heavily loaded with teaching. One desirable arrangement which has obtained in this College from the beginning is the fact that all the students on reaching their senior, but more often their junior year, are required to prepare a graduation thesis on research projects under advisorship of the faculty member who works with him in active collaboration. Also, a number of these students are engaged as student laborers or student assistants, providing them with extra training in various scientific pursuits. Hence, one important advantage accruing as a result of the arrangement has been to make available a large number of intelligent and fairly well-trained helpers in the research activities the faculty members are engaged in.

2. Present technical personnel and field of specialization.

Agricultural Botany

1 Plant physiology, Ph. D., John Hopkins, professor
1 Genetics and morphology, Ph. D., Princeton, associate professor
1 Plant physiology, Ph. D., California, assistant professor

Agricultural Chemistry

1 Biochemistry and nutrition, Ph. D., Yale, professor
1 Physical chemistry, Ph. D., Iowa State, assistant professor
1 Sugar technology, N. S., Louisiana, assistant professor
1 Analytical chemistry, B. S. A., U. P., instructor
1 Par. Chem., U. P., instructor
2 B. S. A., U. P., assistant instructors

Agricultural Economics, Sociology, and Education

1 Agricultural education and agricultural economics, Ph. D., Cornell, professor
1 Agricultural economics, M. S. A., Cornell, instructor
1 Agricultural education and engineering, M. S., Texas State, instructor
1 Agricultural economics, B. S. A., U. P., instructor
1 Agricultural education, B. S. A., U. P., pursuing post-graduate work at Illinois
4 B. S. A., U. P., assistant instructors

Agricultural Engineering

1 Agricultural engineering. M. S., California, associate professor
1 Agricultural engineering, M. S., Iowa State, assistant professor
1 Agricultural engineering, B. S. A., U. P., instructor
1 Agricultural engineering, B. S. A., U. P., taking post-graduate studies abroad
2. B. S. A., U. P., assistant instructors

Agronomy

1 Horticulture, Ph. D., Cornell, professor
1 Agronomy. Ph. D., Iowa, associate professor
1 Agronomy, Ph. D., Iowa, associate professor
1 Plant breeding and genetics, Ph. D., Cornell, Assistant professor
1 Floriculture, M. S., U. P., instructor
3 B. S. A., U. P., assistant instructors

Animal Husbandry

1 Animal husbandry, Ph. D., Iowa State College, professor
1 Poultry husbandry, Ph. D., Cornell University, professor
1 Animal husbandry and veterinary science, B. S. A., Iowa State College, D. V. M., U. P., associate professor
1 Animal husbandry, B. S. A., U. P., M. S., Wisconsin, assistant professor
1 Animal husbandry and veterinary science, D. V. M., U. P., instructor
1 B. S. A., U. P., assistant instructor

Entomology

1 Entomology (economic, ecology, systematic), Sc. D., Harvard, professor and Dean

1 Entomology and zoology, (economic, beneficial insects), Ph. D., California, Associate professor
1 Entomology (economic, taxicology), Ph. D., Iowa State College, assistant professor
1 Entomology, B. S. A., U. P., taking postgraduate work at Wisconsin
1 B. S. A., U. P., assistant instructor

Plant Pathology and Bacteriology

1 Plant pathology, Ph. D., Wisconsin, professor
1 Mycology, Ph. D., Harvard, instructor
1 Bacteriology, B. S. A., U. P., pursuing postgraduate work at Wisconsin
1 B. S. A., U. P., assistant instructor

Soils and Fertilizers

1 Soil chemistry, Ph. D., Goettingen, assistant professor
1 B. S. A., U. P., assistant instructor

Home Economics

1 B. S. E., U. P. assistant instructor

3. Research work being undertaken.

Agricultural Botany

Mineral nutrition of plants
Growth of plants as influenced by growth regulating substances
Cytogenetics and experimental morphology
Plant amelioration
Crop improvement

Agricultural Chemistry

Reversal processing of cinematographic film under tropical conditions
Production of artificial soy sauce from soybeans
Tanning and dyeing of leather
Studies on the industrial uses of Makiling White soil
Fermentation studies on cane juice, sugars, and molasses
Studies on the consumption of foodstuffs
Biochemical studies on Philippine commercial rice varieties
Studies on coconut oil
Submerged culture process for alcoholic fermentation of cassava

Agricultural Economics, Sociology, and Education

Seasonal changes on prices of farm products
Consumer preferences for different agricultural commodities
Food cost and consumption of farm population
Factors affecting success of agricultural cooperatives
Cost of operating tractors on farms
Land ownership among farmers
Use of credit by farmers
Marketing methods and costs — different commodities
Economic study of rice farming, coconut farming, tobacco farming and other types of farming
Economic and social study of farm villages
Composition and mobility of farm population
Availability of public education to children of farmers

Agricultural Engineering

Mechanization of the cultures of Philippine field crops
Irrigation and drainage
Feed processing
Study on grain dryers
Control of erosion
Study on the modifications and adjustments of imported machinery to suit Philippine crops and conditions

Agronomy

Physiology of fruits and vegetables in storage
Search for and rapid multiplication of superior strains of fruits
Studies on methods of plant propagation, stock-action interactions, and orchard management
Variety tests of important farm and truck crops
Introduction and trials of foreign horticultural plants
Cultural studies of forage and various annual and perrenial crops
Agronomical and utilization study of important and promising fiber and oil plants
Selection, hybridization, and stock maintenance in rice and corn
Breeding of sugar cane, root crops, tobacco, and other miscellaneous crops
Studies on fruit forcing, storage of bulbs and corns, papain extraction, fertilizer requirements of crops, composting, windbreaks, balling of large trees, tree surgery, and prunning

Animal Husbandry

Developing breeds of cattle, sheep, goats, swine, and poultry adapted to Philippine conditions
Improving carabaos, cattle, and poultry
Studies to improve rations for swine and poultry
Studies on palatability of feeds
Breeding habits of cattle
Studies on body temperature, pulse and respiratory rates
Dentition of horses, sheep, and goats
Salt consumption of horses, sheep, and goats
Fertilizing constituents of manure of sheep, goats, and rabits
Influence of cow's rumen content on the growth of calves and lambs
Shrinkage of concentrates
Influence of partial and complete weaning of calves on milk production Scindi cows
Studies on methods of castration
Weights and measurements of internal organs of swine
Twin birth in the carabao
Carcass studies in cattle of different breeds and ages

Entomology

Insect pests of field and garden crops, orchard trees, etc.
Entomophagous insects
Insecticides
Ecology: flower-visiting insects; insects on Philippines mountains; permanent reservation of the migratory locust in the Philippines
Taxonomy: Hemipter, Coleoptera, Lepidoptera
Agricultural zoology
Reference collections in entomology and zoology

Plant Pathology and Bacteriology

Virus diseases of abaca, sugar cane, and coconut
Fungus diseases (rice, corn, etc.)
Bacterial diseases

Soils and Fertilizers

(a) Soil fertility
    (1) Methods of maintaining soil fertility
    (2) Methods of determining soil fertility
    (3) Methods of augmenting soil fertility
(b) Lysimeter study with fertilizers

4. Additional facilities needed

Although a certain amount of additional research work can be undertaken in certain departments of the College with the existing facilities if given additional personnel, it will be necessary to expand these facilities if the desired amount of research work is to be carried on. The amount of money needed to equip property the Central Experiment Station is itemized in Appendix A.

APPENDIX A

APPROPRIATION NECESSARY TO EQUIP AND STAFF THE CENTRAL EXPERIMENT STATION AT THE COLLEGE OF AGRICULTURE

Items	Experiment Station Plant	Annual Operating Expenses
	Pesos	*Pesos*
1. Land (50 hectares, pasture)	50,000	
2. Buildings	675,000	
3. Roads	25,000	
4. Lighting System	100,000	
5. Field Machinery and Equipment	250,000	
6. Laboratory Equipment	200,000	
7. Furniture and Fixtures	50,000	
8. Irrigation and Water System	500,000	
9. Work Animals	10,000	
10. Livestock	10,000	
11. Transportation, Hauling		30,000
12. Laboratory Supplies		25,000
13. Office Supplies		15,000
14. Feeding Stuffs		25,000
15. Travelling Expenses		30,000
16. Printing, Books, Periodicals		25,000
17. Miscellaneous Supplies		30,000
18. Director's Discretionary Fund		1,200
19. Salaries of Technical Workers and Administrative Personnel		466,200
20. Wages of Laborers		120,000
Total	1,870,000	767,400[x]

[x] 50% should be made available during the first year of operation

1. **Land** (Pasture for animals, 50 hectares)	**50,000**
2. **Buildings**	**675,000**

(Hog house; work cattle barn; feed bodega; farm machinery building, including shop; irrigation pumping machinery, shed; building for driers, mills, and other processing machine; crop storage building; agro-

nomic and horticulture research laboratories; ice plant building; insectary; pathologium and glasshouses; greenhouses; heroarius; soils laboratory; agric. economics and statistics laboratory; silo; quarters for foreign scientists; range cattle sheds; compost house; tobacco curing house; administration building; home economics laboratory; lysimeter building; "wire" house; insecticide testing laboratory; horticulture building; etc.)

3. Roads 25,000

4. Lighting System 100,000

5. Field Machinery, and Equipment 250,000

(Rice mill; crop drier; combing; baling machine; plows; harrows; cultivators; drill; planters; tractors; spraying and dusting equipment; harvester; graders; ditchers; scales; ice making equipment; mechanical posthole diggers; cotton gin; wire fence stretcher; feed cutters; feed elevators; grinders; feed; electric welder; motorized corn sheller; coffee romster, grinder and percolator; dogumming machine; cassava grater, driers and sieves; twine making machine; rubber roller, press and smoke house; roto-tillers; labelling machine; weaving machine; garden tools; husker; farm wagons; scales and balances; ice-making and refrigerating equipment; small foundry and accessories; metal lathe; threading and cutting; garden tractors with attachments; mowers; compressor; servicing equipment, bedder (cultivator); miscellaneous tools;

6. Laboratory Equipment 200,000

(Air conditioner; microscopes; spectograph; sterilizers; seed counter; seed germinator; lysimeter; incubators; constant temperature and humidity chambers; ovens; food canning equipment; food drying equipment; transformer; fiber decorticator, tensil strength machine; micro balance; calorimeter; combustion furnace; gas analysis apparatus; microstomes; photographic equipment; calculators; IBM tabulator; card puncher; kitchen equipment; textile laboratory equipment; herbarium cases; refrigerator; micromanipulator; refractometer; centrifuge; biological stains and histological reagents; photoelectric colorimeter (Evelyn); respirometer (Warburg apparatus); light meter; ultraviolet lamp; compressed air pump; time switch, spectrophotometer, infra red, Bechman; chemical hoods; domineralizer; electrograph (fisher Scientific); digester, authoclave; fat stability tester; flame photometer, Bechman (Cenco); Flash point tester for oils; 14-060 galvanometer adapter cable, for 14-D10 Coleman Universal spectrophotometer; hydrometer; hydrophil balance; 40-707 Industro-Gas analysis apparatus; interval timer; gauge; mercury diffusion pump; moisture meter; electronic, molecular still; motor stirrers, electric; nephelometer adapter, complete with two selected photocalls; phimeter; polarograph; shakers spectrograph; viscesimeter; tineture press; burettes, ultra miero, and attachment; Warburg apparatus; tube, observation, inversion type, 200 mm.; polarimeter; hydrometers; bagasse cutter control tube, telescopic; insecticide-testing equipment such as insecticide grinders, insecticide mixers, spray tables, etc.; ample supply of insecticides; power and hand dusters; sprayers and other insecticide applicators; additional more powerful microscopes and binoculars; additional insect boxes; insectproof cases; automatic temperature and humidity recording apparatus; transfer cases; damp chambers; potentiometer; muffle furnace; manometer; neubauer dishes, mitscherlich pots; soil testing kit; fertilizers; dissecting microscopes; thermometer; chemical glasswares; museum jars; apparatus and chemical compounds for the physiological investigations of horticultural and agronomic products; polariscope; U.S. cotton grade standards; pyrometers; electric lynamometers (laboratory type); etc.)

7. Furniture and fixture 50,000
8. Irrigation and water system 500,000

   (Irrigation pumps; stationery engines; dams; flumes; pipes; windmill; water system and reservoir; etc.)

9.	Work animals	10,000
10.	Livestock (Dairy cattle; chickens; swine; goats; etc.)	10,000
11.	Transportation and hauling (Automobile; station wagon for economic surveys, soil surveys, field trips; trucks; pick-up; etc.)	30,000
12.	Laboratory supplies (Culture media; chemicals, etc.; fungicides and insecticides; cotton; strains for indicators; microscope slides; cover slips; boxes; culture tubes and petri dishes; glasswares; herbarium papers; museum jars, etc.; ball jars; Neubaner dishes; Mitscherlichi pots; glass tubings; rubber tubings; beakers; flasks; funnels; burettes; pipettes; desiccators; micro-burettes; micro-pipettes; etc.)	25,000
13.	Office supplies	15,000
14.	Feeding stuffs (Rice bran; copra meal; corn; fish meal; peanut hay, soybean hay; tapilan hay; etc.)	25,000
15.	Traveling expenses	30,000
16.	Printing books, periodicals	25,000
17.	Miscellaneous supplies	30,000
18.	Director's discretionary fund (entertainment and representation expenses)	1,200
19.	Salaries of technical personnel and helpers for ten divisions; namely, botany; agricultural engineering; chemistry; soils and fertilizers; entomology; plant pathology and bacteriology; agricultural economics, sociology, and education; agronomy; animal husbandry; and home economics (See Appendix B)	466,200
20.	Wages of laborers	120,000

5. Estimated financial requirements

The estimated financial requirements for additional facilities, personnel, and labor are also given in Appendix A.

6. Recommendations concerning organization, administration and coordination.

The Central Experiment Station will have an administrative staff and a technical staff. The administrative staff will include a director, an assistant director, an executive officer, and others shown in Appendix B. The Dean of the College of Agriculture is ex officio director of the experiment station.

The technical staff will be divided into ten divisions, corresponding to the fields of agricultural research (See Appendix B). The divisions are as follows: agricultural botany; agricultural chemistry; agricultural economics, sociology, and education; agricultural engineering; agronomy; animal husbandry; entomology; plant pathology and bacteriology; soils and fertilizers; and home economics. Each division is in the charge of a chief. Heads of departments of the College will be chiefs of divisions.

While the majority of the personnel of the Central Experiment Station will work on full-time basis with the station, the chiefs of divisions and ranking members generally will be serving on part-time basis, as it will be highly desirable from the standpoint of both the personnel concerned and the students in the College that they do some amount of instructional work.

The chiefs of the different divisions of the Central Experiment Station will compose the advisory committee, which shall make suggestions to the director from time to time regarding the conduct of research in the station.

The power of appointment, removal, and promotion of personnel in the Central Experiment Station at the College of Agriculture shall be vested in the Board of Regents of the University of the Philippines. Such appointments, removal, and promotion will be made upon recommendation of the Director of the Central Experiment Station and the President of the University of the Philippines.

As a means of effecting coordination with the Department of Agriculture and Natural Resources, a research coordinator should be appointed by the President of the Philippines. The research coordinator shall be directly responsible to the Secretary of the Department of Agriculture and Natural Resources. His main duty shall be to correlate and coordinate the various activities of the different agencies engaged in agricultural research. He shall advise these different agencies as to the phases of agriculture that need immediate study and investigation. However, the approval of specific problems of research and investigation to be undertaken by personnel of the Central Experiment Station shall be entrusted to the director.

APPENDIX B

PROPOSED STAFF OF THE CENTRAL EXPERIMENT STATION

Administrative Staff

1 Dean of the College of Agriculture and Director ex officio of the Central Experiment Station	10800
1 Assistant director	9600
1 Administrative officer	6000
1 Biometrist	6600
1 Secretary to the director	3600
1 Property officer	3600
1 Collecting and disbursing officer	3600
1 Editor	6000
1 Librarian	4800
1 Photographer	2400
1 Illustrator	2400
4 Clerks	9600

Agricultural Botany

1 Chief of division[a] at 7200-8400	8400
1 Associate botanist at 6000-6600	6600
2 Assistant botanists at 3600-5400	10800
4 Research assistants at 2400	9600
1 Clerk	2400

Agricultural Chemistry

1 Chief of division[a] at 7200-8400	8400
1 Associate agricultural economist at 6000-6600	6600
2 Assistant agricultural chemists at 3600-5400	10800
4 Research assistants at 2400	9600
1 Clerk	2400

Agricultural Economics, Sociology, and Education

1 Chief of division[b] at 7200-8400	8400
1 Associate agricultural economist at 6000-6600	6600
1 Associate rural-education sociologist at 6000-6600	6600
1 Assistant agricultural economist at 3600-5400	5400

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[a] Heads of departments in the College will be chiefs of divisions.

[b] Head of either department of Agricultural Economics or Department of Agricultural Education will head this division.

1 Assistant rural-education sociologist at 3600-5400	5400
4 Research Assistants at 2400	9600
1 Clerk	2400

Agricultural Engineering

1 Chief of division at 7200-8400	8400
1 Associate engineer at 6000-6600	6600
2 Assistant engineers at 3600-5400	10800
4 Research Assistants at 2400	9600
1 Clerk	2400

Agronomy

1 Chief of division at 7200-8400	8400
1 Agronomist at 7200-8400	8400
2 Associate agronomists at 6000-6600	13200
2 Assistant agronomists at 3600-5400	10800
4 Research assistants at 2400	9600
1 Clerk	2400

Animal Husbandry

1 Chief of division at 7200-8400	8400
1 Animal husbandman at 7200-8400	8400
1 Associate animal husbandman at 6000-6600	6600
2 Assistant animal husbandmen at 3600-5400	10800
4 Research assistants at 2400	9600
1 Clerk	2400

Entomology

1 Chief of division at 7200-8400	8400
1 Associate entomologist at 6000-6600	6600
2 Assistant entomologists at 3600-5400	10800
4 Research assistants at 2400	9600
1 Clerk	2400

Plant Pathology and Bacteriology

1 Chief of division at 7200-8400	8400
1 Associate pathologist at 6000-6600	6600
1 Assistant plant pathologist at 3600-5400	5400
1 Assistant bacteriologist at 3600-5400	5400
4 Research assistants at 2400	9600
1 Clerk	2400

Soils and Fertilizers

1 Chief of division at 7200-8400	8400
1 Associate soil technologist at 6000-6600	6600
1 Assistant soil technologist at 3600-5400	5400
4 Research assistants at 2400	9600
1 Clerk	2400

Home Economics

1 Chief of division at 7200-8400	8400
1 Associate home economist at 6000-6600	6600
1 Assistant home economist at 3600-5400	5400
4 Research assistants at 2400	9600
1 Clerk	2400

APPENDIX "B"

Republic of the Philippines
Department of Agriculture and Natural Resources
Bureau of Plant Industry
Manila

April 15, 1950

Dr. Amando M. Dalisay,
Executive Secretary,
National Economic Council
P N B Building, Escolta,
Manila

Dear Doctor Dalisay:

Herewith are the estimates of amounts urgently needed, for strengthening the Central Experiment Station of the Bureau of Plant Industry and seven of its 16 regional experiment stations. Most of the money requested is for replacing buildings, field equipments and laboratory apparatus which were destroyed during the last war.

While it is necessary to improve the other stations, only those listed have been included in his request believing that there would not be enough money for all of them. The stations included are the more important ones which we desire very much to put in presentable shape before the Pan Pacific Science Congress is convened here.

The estimates total ₱1,000,410 and do not include salaries of technical men and administrative personnels.

Sincerely yours,

s/N. B. Mendiola
t/NEMESIO B. MENDIOLA
Member, Philippine Society of Agriculturists

COPY

SUMMARY OF TOTALS FOR THE ATTACHED EXPERIMENT STATION

1.	Central Experiment Station	₱ 141,145.00
2.	Ilagan Tobacco Experiment Station	100,000.00
3.	Maligaya Rice Experiment Station	170,000.00
4.	Plant Breeding Station	209,850.00
5.	Lipa Citrus Experiment Station	107,500.00
6.	Lanao Experiment Station	125,600.00
7.	La Granja Sugar Cane Experiment Station	95,315.00
8.	Kidapawan Wrapper Experiment Station	51,000.00
	GRAND TOTAL	₱1,000,410.00

Urgent Needs for Agricultural Research of the Bureau of Plant Industry

FOR THE CENTRAL EXPERIMENT STATION, MANILA

1.	For construction of buildings to replace those destroyed in the last war:	
	One tobacco office-laboratory	₱ 16,000.00
	One tobacco flue-curing barn	4,000.00
	One tobacco curing shed	2,500.00
	Furniture for tobacco office-laboratory	3,000.00
	Equipment for tobacco laboratory and culture	7,000.00
	One Plant Breeding Office-laboratory building	16,000.00
	One Fiber laboratory building	10,000.00
	Total	₱ 58,500.00
2.	For replacement of defective cables and tubes of army X-ray unit with parts of Universal Unit, and for providing the unit with a measuring device for X-ray output	2,645.00
3.	Two helicopters, one equipped for dusting and the other for spraying	50,000.00
	Total	₱ 111,145.00
4.	Wages of laborers	40,000.00
	GRAND TOTAL	₱ 151,145.00

FOR THE ILAGAN TOBACCO EXPERIMENT STATION

Ilagan, Isabela

For replacing buildings, equipments and furniture destroyed in the last war:

One office building	₱	6,000.00
One Superintendent's quarters		6,000.00
One tobacco warehouse		5,000.00
Two curing sheds at ₱1,500 each		3,000.00
Two assistants' quarters at ₱3,000 each		6,000.00
Five employees' quarters at ₱1,000 each		5,000.00
One green-house		1,500.00
Construction of fences		4,000.00
Furniture		3,000.00
Farm equipments, including machinery		10,500.00
Total	₱	50,000.00
Wages of Laborers		50,000.00
GRAND TOTAL	₱	100,000.00

FOR MALIGAYA RICE EXPERIMENT STATION

Muñoz, Nueva Ecija

For completion of one office-laboratory	₱	4,000.00
For repairs of one Superintendent's residence		2,000.00
For completing and repair of one warehouse and machinery shed		10,000.00
For repair of one seed bodega		2,000.00
For reconstructing one power house		1,000.00
For completing and repair of seven technical personnel's cottages		7,000.00
For rebuilding the dikes and irrigation canals of the station		10,000.00
For repair of three laborer's quarters		3,000.00
For reconstruction of barb wire fences with concrete posts		10,000.00
One set of modern laboratory equipment for rice studies		10,000.00
Equipments, including generator and electric light supplies for lighting the station		6,000.00
For an artesian well; one big water pump and concrete tank reservoir and pipings for water supply of the station		25,000.00

For additional machinery and equipment for modern rice cultivation		20,000.00
Total	₱	110,000.00
For wages of laborers		60,000.00
GRAND TOTAL	₱	170,000.00

FOR THE PLANT BREEDING STATION AT CAMP ELDRIGE, LOS BAÑOS

Los Baños, Laguna

One rice and corn laboratory	₱	5,000.00
One seed and harvest shed		5,000.00
One building for artificial grain dryer		5,000.00
Four carabaos, four plows and 4 harrows		2,000.00
One grain drier		8,000.00
One bin for the drier		500.00
One warehouse		1,250.00
Pipings for water supply:		
66 pieces 4" pipes x 20 ft. elbows, canion and valves		2,000.00
Electric materials for:		
supplying the Station with electric current for the Laguna Power Line		1,000.00
One water tank (cement or galvanized iron)		1,500.00
One Nursery House		2,500.00
One calculating machine (Monroe)		1,000.00
One Analytical balance		250.00
One shed for farm implements		2,000.00
One abaca stripping machine (Hagutan)		400.00
One motor for the hagutan		200.00
One fruit and vegetable laboratory		3,000.00
One salesroom building		2,000.00
Five quarters for technical employees		15,000.00
Total	₱	106,350.00

One 3-disc, 28" blade plow One crawler tractor, "TD-6" or equivalent One 4-disc, 28" blade plow One tractor, disc harrow, 8'-0 cut, 28-16" One Farmall "M" tractor, rubber-tired or equivalent One 2-row corn planter Two 1-row corn picker-husker Two trailers One Farmall "A" complete with regular equipment or equivalent	48,500.00
Total	₱ 154,850.00
Wages for laborers	55,000.00
GRAND TOTAL	₱ 209,850.00

FOR LIPA CITRUS EXPERIMENT STATION

Lipa City

One Office building	₱ 15,000.00
One fruit curing and laboratory building	15,000.00
One conditioning house	20,000.00
Laboratory apparatus & equipments	5,000.00
High power spray pumps	2,500.00
Total	₱ 57,500.00
For wages of laborers	50,000.00
GRAND TOTAL	₱ 107,500.00

FOR THE LAMAO HORTICULTURAL EXPERIMENT STATION

Lamao, Limay, Bataan

One — Two story Office Building 8 x 10 m.	₱ 20,000.00
One Permanent Trellis for Nursery	2,000.00
One Superintendent's Quarters	10,000.00
Five — Employee's Quarters	1,500.00
Field Office	500.00
Seed Bodega	500.00
Tool Bodega	500.00
Orchard Sheds	500.00
Tractor Shed & Work Shop	400.00
For the Irrigation System	6,000.00
Laboratory	2,000.00

Laboratory apparatus & Equipments:

Balance Microscopes		10,000.00
For fencing		1,700.00
One — Heavy duty International Harvester Four Moldboard Plow with Power Lift One — Heavy Duty Disc Harrow International Harvester One — Hay Mower		10,000.00
Total	₱	65,600.00
For wages of laborers		60,000.00
GRAND TOTAL	₱	125,600.00

FOR THE LA GRANJA SUGAR EXPERIMENT STATION

La Carlota, Occidental Negros

One Superintendent's Qtr. (3 rms.)	₱	6,000.00
Five Technical personnel Qtrs. (2 rms.) each at ₱3,000		15,000.00
Five Non-technical Qtrs. w/nipa roofing but board sidings and floor at ₱2,000 each		10,000.00
One Garage for machineries and Tool Bodega		3,000.00
One Compost pit & corral for working animals		2,000.00
One plant Breeding & Insectary Building		3,000.00
One Nursery and Seed House		2,000.00
One Station Wagon, Willys		4,500.00
One Lawn Mower		15.00
One Disc-plow, McCormick Deering, 4 Disc. 28" dia.		2,500.00
One Water pump, 18 gal. cap/minute		150.00
Water pipes, 2" dia. 50 lengths at 25 per length		1,250.00
One portable sugar cane crusher		500.00
One Polariscope		2,000.00
One Lawn-mower attachment to our Farmall-H		2,500.00
Two water tanks 2,000 gal. cap. each		1,000.00
Total	₱	45,315.00
For wages of laborers		50,000.00
GRAND TOTAL	₱	95,315.00

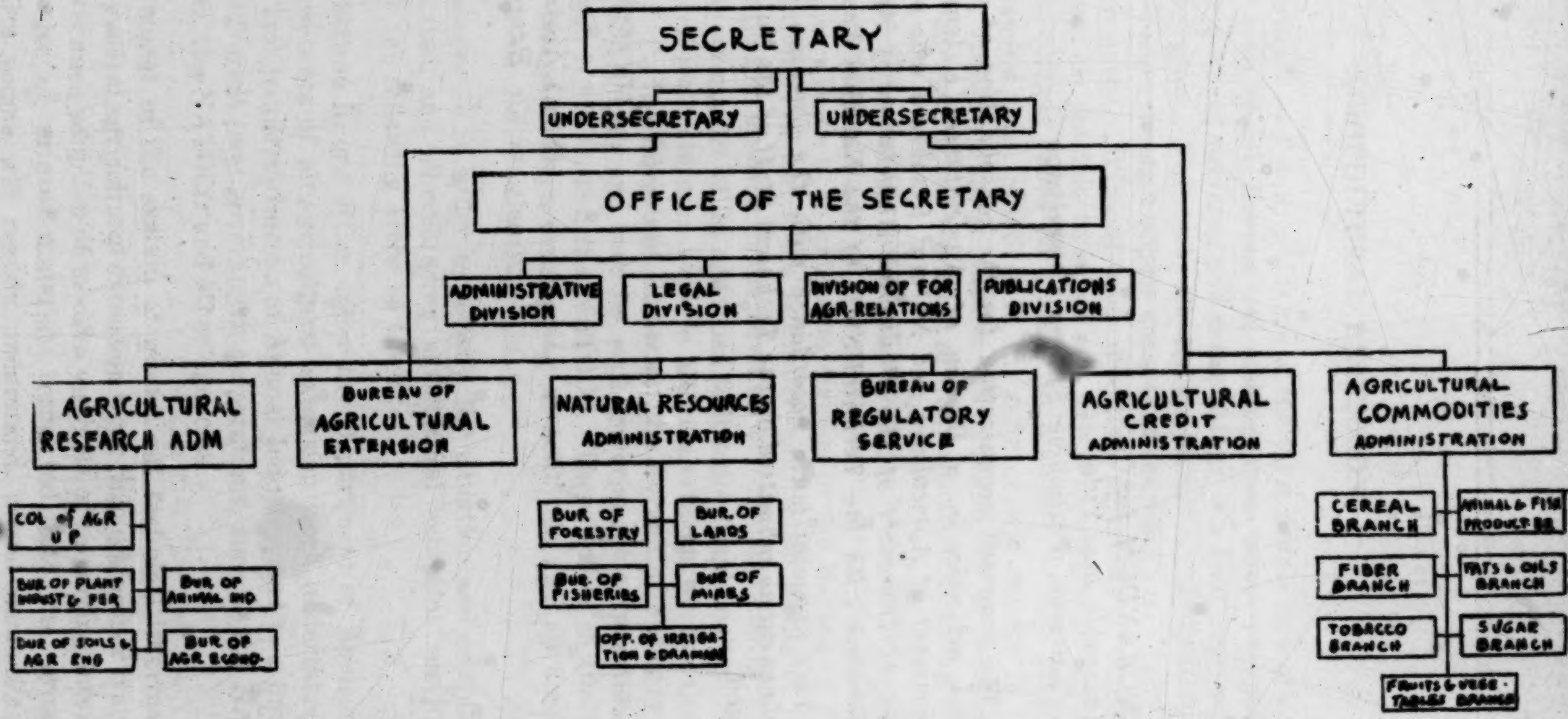
FOR THE KIDAPAWAN WRAPPER EXPERIMENT STATION

Kidapawan, Cotabato

One tobacco warehouse	₱	6,000.00
One Assistant's quarter		2,500.00
One tool house		1,000.00
Three employees quarters at 1,000 each		3,000.00
Repair of existing buildings		2,500.00
Furniture		1,000.00
Farm equipment including machinery		5,000.00
Total	₱	21,000.00
For wages of laborers		30,000.00
GRAND TOTAL	₱	51,000.00

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

(PROPOSED REORGANIZATION)


SECRETARY
UNDERSECRETARY
UNDERSECRETARY
OFFICE OF THE SECRETARY
ADMINISTRATIVE DIVISION
LEGAL DIVISION
DIVISION OF FOR AGR. RELATIONS
PUBLICATIONS DIVISION
AGRICULTURAL RESEARCH ADM
BUREAU OF AGRICULTURAL EXTENSION
NATURAL RESOURCES ADMINISTRATION
BUREAU OF REGULATORY SERVICE
AGRICULTURAL CREDIT ADMINISTRATION
AGRICULTURAL COMMODITIES ADMINISTRATION
COL OF AGR U P
BUR OF PLANT INDUST & PER
BUR OF ANIMAL IND
BUR OF SOILS & AGR ENG
BUR OF AGR ECONO-
BUR OF FORESTRY
BUR. OF LANDS
BUR. OF FISHERIES
BUR OF MINES
OFF. OF IRRIGA-TION & DRAINAGE
CEREAL BRANCH
ANIMAL & FISH PRODUCTS BR
FIBER BRANCH
FATS & OILS BRANCH
TOBACCO BRANCH
SUGAR BRANCH
FRUITS & VEGE-TABLES BRANCH

June 12, 1950

MEMORANDUM for
Honorable Jose Yulo
Chairman, Philippine Survey Commission

The proposed organization for the consolidation of agricultural extension activities in a Bureau of Agricultureal Extension under the Department of Agriculture and Natural Resources was prepared by the Board of Directors of the Philippine Association of Agriculturists in cooperation with the Techncal Staff of the National Economic Council.

This proposal is in accordance with the program of agricultural development as submitted by the Technical Staff of the National Economic Council.

Very respectfully,

(Sgd.) Amando M. Dalisay
Executive Secretary

Encl.:

AGRICULTURAL EXTENSION

Basic Importance — Proper guidance of the farm people as a measure of raising their level of intelligence and making them adopt progressive changes in their mode of thinking and doing things is a first prerequisite of agricultural progress. This task calls for a systematic, coordinated, and effective agricultural extension service capable of reaching every farm and hamlet in the country. Without such effective agricultural extension service, it will not be possible to carry out any constructive program of agricultural development based on a scientific approach to the problems involved; the general farm practices in the country will remain in their backward state; the farming population will continue to be indifferent to constructive changes for the elevation of their standard of living.

The Present Set-up— Agricultural extension work is now being carried out by separate agencies of the government operating independently of each other. There is an extension division in the Bureau of Plant Industry, the activities of which are naturally confined to plants or farm crops, and an extension division in the Division of Animal Industry which confines the subject matter of its activities to livestock and poultry. Some amount of agricultural extension work is also undertaken by the College of Agriculture, U.P., the Bureau of Fisheries, the Bureau of Forestry and the Division of Soil Survey and even by such government corporations as the NACOCO, the NAFCO, and the NATOCO. There exists in the field of agricultural extension much overlapping of activities and an absolute lack of coordination for efficiency.

Needed changes — In order to remedy the situation and establish a unified, coordinated, and all-embracing agricultural extension service, it is essential that the following steps be taken:

1. Consolidation in one office under the Department of Agriculture and Natural Resources of all agricultural extension work undertaken by the Bureau of Plant Industry, Bureau of Animal Industry, and to a limited extent, by the different semi-government corporations, such as the NACOCO, the NAFCO, the NATOCO and other agencies.

2. Improvement of the system of giving out technical information and conducting general agricultural extension work through proper training of extension personnel, adoption of modern methods of imparting information, including use of printed materials translated into the principal dialects the farm people will readily understand, actual demonstration

of improved farming method and practices, motion pictures and other visual aids depicting desirable farm operations and practices.

3. Expansion of the unified agriculture extension service to the end that every farm and home may be reached by extensions workers and thereby be made to profit from the adoption of improved farms and home practices.

4. Emphasis on the teaching of farm boys and girls, as well as of the women-folk on the farms that they may be equally useful in making farm life a more desirable one.

Financial Requirement — The total financial requirement of a fully organized agricultural extension service will amount to almost ₱3.5 million divided into ₱2 million for salaries and ₱1.5 million for sundry expenses.

The present national appropriation for agricultural extension activities in the various offices of the Department of Agriculture and Natural Resources which will be consolidated in the proposed Bureau of Agricultural Extension will amount to ₱167,700. The agricultural fund contributed by the provinces and municipalities under C. A. No. 85 which will form part of agricultural extension fund amounts to approximately ₱1.7 million.

All that is needed, therefore, to realize the proposed organization is a national appropriation of around ₱1.8 million in addition to the existing appropriations. This is the ideal. However, if the finances of the national government is such as not to permit the appropriation of the entire amount, a minimum effective organization could be established with an additional national appropriation of ₱500,000 to be used for the salaries of indispensable additional personnel, purchase of equipment and facilities for extension work, travelling and other sundry expenses.

PROPOSED ORGANIZATION FOR THE CONSOLIDATION OF ALL AGRICULTURAL EXTENSION ACTIVITIES

I. ADMINISTRATIVE DIVISION

a. Mail and Service Record Section
b. Budget, Accounting and Disbursement Section
c. Property and Supply Section

Functions — To take charge of personnel; to allocate funds to keep the accounts; to prepare the budget; to make disbursements; to take charge of procurement, custody and allocation of property and supplies and the maintenance of same; to keep files; to handle outgoing and incoming mails; to maintain service; and to take charge of transportation facilities.

II. INFORMATION DIVISION

- a. Public and Visual Instruction Section
- b. Exhibits and Field Section
- c. Motion Picture and Radio Section

Function — To prepare, with the cooperation of specialists standardized agricultural information, teaching materials, circular-letters, posters, charts, news articles, radio scripts, etc.; to take charge of the organization of farmers' meetings and conferences; to furnish the farm people and their families about the activities of the local extension workers through newspapers, radios, etc; to take charge of all exhibits and fairs, motion pictures and radio broadcasts; to develop and effectuate programs and information for local extension workers; to teach the local agents how to prepare and utilize information and visual techniques; to take charge of the preparation of all reports and the information of results and the dissemination of same through the press, radio, etc.; and to lend or distribute such informative materials as slide and movie films, charts, posters, publications and other printed materials.

III. FIELD SERVICE AND TRAINING DIVISION

- a. Field Coordination Section
- b. Field Studies and Training Section

Functions — To maintain and supervise the field personnel; to develop and coordinate all extension programs based on actual situations and needs of farm people; to render technical advice and assistance to the local extension workers in the development of programs and plans to suit local situations and problems; to furnish assistance and guidance to local home demonstrators in the organization and conduct of home demonstration work to meet the needs of farm homemakers; to assist the field personnel in developing programs for 4-W clubs; to develop and direct educational research program; to undertake field studies of extension work in agriculture, home economics and 4-W clubs; to plan and assist in educational research and personnel training centers' programs and procedures for the improvement of field personnel; and to prepare teaching materials and methods.

IV. SUBJECT MATTER DIVISION

- a. Crop Specialists
- b. Animal Specialists
- c. Home Economics
- d. Agricultural Economics

e. Agricultural Engineering
f. Soil and Fertilizers
g. Pests and Disease Control

Functions — The subject matter specialists reinforce the work of the local extension workers, and acts as contact officer between the researchers and the extension workers as regards the latest findings in their respective lines of work and to furnish these findings to the field personnel; to interpret the proper application of new finding to the solution of farm and home problems; to prepare plans and make recommendations on his or her line; to formulate the development of a sound program for the local personnel; to assist and lend in the effective use of teaching methods adopted to the subject matter involved; to help popularize program through publications, circulars, etc.; to present the subject matter to the different government entities; to use and learn the developed methods, policies and the techniques which will encourage better farm practices; to encourage and participate on the organization of the 4-W clubs and other activities; to develop an understanding among the people by the solution of their economic problems and helping them in marketing their products; to promote the better utilization of farm labor; and to assit the local home demonstrators in reaching the goals of home economics by adopting technical subject matter to the people in food preservation, nutrition, home industries and handicraft.

V. PRODUCTION AND DISTRIBUTION DIVISION

a. Seed and Plant Distribution Section
b. Livestock Distribution Section

Functions — To equip, operate, and maintain nurseries, demonstration and livestock farms; to raise and distribute improved seeds and plant materials and good-breed of animals for distribution to farmers at nominal cost.

PROPOSED SALARIES AND WAGES

Office of the Director

One Director at ₱7,200 per annum	₱ 7,200.00
One Assistant Director at ₱6,600 per annum	6,600.00
One Stenographer at ₱1,800 per annum	1,800.00
One Messenger at ₱1,200 per annum	1,200.00
Total	₱ 16,800.00

Administrative Division

One Administrative Officer at ₱4,500 per annum	₱ 4,500.00
Three Chiefs of Sections at ₱2,160 per annum each	6,480.00
Three Recorders at ₱1,200 per annum each	3,600.00
Three Messengers at ₱1,080 per annum each	3,240.00
One Mailing Clerk at ₱1,440 per annum	1,440.00
Three Janitors at ₱1,140 per annum each	3,420.00
Two Receiving and Shipping Clerks at ₱1,200 p.a. each	2,400.00
Two Laborers at ₱1,140 per annum each	2,280.00
One Bookkeeper at ₱2,220 per annum	2,220.00
One Cashier at ₱2,400 per annum	2,400.00
Four Clerks at ₱1,200 per annum each	4,800.00
One Billing and Disbursing Clerk at ₱1,440 per annum	1,440.00
Total	₱ 38,220.00

Information Division

One Chief of Division at ₱5,100 per annum	₱ 5,100.00
One Copy Editor at ₱3,300 per annum	3,300.00
Three Chiefs of Section at ₱3,300 per annum each	9,900.00
One Photographer at ₱1,200 per annum	1,200.00
Two Drivers at ₱1,200 per annum each	2,400.00
One Proof Reader at ₱2,040 per annum	2,040.00
One Typist at ₱1,200 per annum	1,200.00
One Stenographer at ₱1,440 per annum	1,440.00
Two Laborers at ₱1,140 per annum each	2,280.00
One Distributing Clerk at ₱1,200 per annum	1,200.00
One Radio Commentator at ₱2,040 per annum	2,040.00
One Artist at ₱1,200 per annum	1,200.00
Two Statisticians at ₱2,040 per annum each	4,080.00
One Planner and Program Maker at ₱2,040 per annum	2,040.00
Total	₱ 39,420.00

Field Service and Training Division

One Chief of Division at ₱6,000 per annum	₱	6,000.00
One Field Coordinator at ₱4,500 per annum		4,500.00
One Education Analyst at ₱4,500 per annum		4,500.00
One Stenographer at ₱1,560 per annum		1,560.00
One Typist at ₱1,200 per annum		1,200.00
Total	₱	17,760.00

Subject Matter Division

One Chief of Division at ₱6,000 per annum	₱	6,000.00
One Agronomist at ₱4,500 per annum		4,500.00
One Horticulturist at ₱4,500 per annum		4,500.00
One Animal Husbandman at ₱4,500 per annum		4,500.00
One Food Technologist at ₱4,500 per annum		4,500.00
One Agricultural Economist at ₱4,500 per annum		4,500.00
One Agricultural Engineer at ₱4,500 per annum		4,500.00
One Soil Technologist at ₱4,500 per annum		4,500.00
One Landscape Gardener at ₱4,200 per annum		4,200.00
One Home Economist for Home Management at ₱3,720 per annum		3,720.00
One Home Economist for Home Industries and Handicraft at ₱3,720 per annum		3,720.00
One Plant Pathologist at ₱4,500 per annum		4,500.00
One Entomologist at ₱4,500 per annum		4,500.00
One Veterinarian at ₱4,500 per annum		4,500.00
One Stenographer at ₱1,800 per annum		1,800.00
Two Typists at ₱1,200 per annum each		2,400.00
Total	₱	66,840.00

Distribution Service Division

One Superintendent of Demonstration Farms at ₱4,500 per annum	₱	4,500.00
One Superintendent of Nurseries at ₱4,500 per annum		4,500.00
One Distributing Clerk at ₱1,200 per annum		1,200.00
One Typist at ₱1,200 per annum		1,200.00
One Laborer at ₱1,140 per annum		1,140.00
Total	₱	12,540.00

District Agricultural Service

Nine District Agriculturists at ₱4,800 per annum each	₱ 43,200.00
Nine District Home Demonstrators at ₱3,720 per annum each	33,480.00
Nine Clerks at ₱1,080 per annum each	9,720.00
Nine Messengers at ₱840 per annum each	7,560.00
Total	₱ 93,960.00

Provincial Agricultural Service

Twenty-eight Provincial Agriculturists for first class provinces at ₱4,200 per annum each	₱ 117,600.00
Twenty-eight Provincial Home Demonstrators for first class provinces at ₱3,300 per annum each	92,400.00
Nine Provincial Agriculturists for second class provinces at ₱3,720 per annum each	33,480.00
Nine Provincial Home Demonstrators for second class provinces at ₱2,940 per annum each	23,260.00
Seven Provincial Agriculturists for third class provinces at ₱2,940 per annum each	20,580.00
Seven Provincial Home Demonstrators for third class provinces at ₱2,280 per annum each	15,960.00
Four Provincial Agriculturists for fourth class provinces at ₱2,280 per annum each	9,120.00
Four Provincial Home Demonstrators for fourth class provinces at ₱1,800 per annum each	7,200.00
Two Provincial Agriculturists for fifth class provinces at ₱1,800 per annum each	3,600.00
Two Provincial Home Demonstrators for fifth class provinces at ₱1,680 per annum each	3,360.00
Twenty-eight Clerks at ₱1,200 per annum each	33,600.00
Nine Clerks at ₱1,080 per annum each	9,720.00
Seven Clerks at ₱900 per annum each	6,300.00
Six Clerks at ₱780 per annum each	4,680.00
Fifty Compilers at ₱900 per annum each	45,000.00
Fifty Messengers at ₱660 per annum each	33,000.00
Total	₱ 458,860.00

Municipal Agricultural Service

Abra	₱ 22,440.00
Agusan	22,980.00
Albay	19,740.00
Antique	13,560.00
Bataan	12,060.00
Batanes	2,700.00
Batangas	22,620.00
Bohol	35,400.00
Bukidnon	7,200.00
Bulacan	27,720.00
Cagayan	22,620.00
Camarines Norte	12,900.00
Camarines Sur	30,180.00
Capiz	50,280.00
Catanduanes	6,600.00
Cavite	20,580.00
Cebu	34,200.00
Cotabato	16,020.00
Davao	18,060.00
Ilocos Norte	20,580.00
Ilocos Sur	24,000.00
Iloilo	38,220.00
Isabela	20,640.00
La Union	18,420.00
Laguna	25,380.00
Lanao	22,380.00
Leyte	52,260.00
Marinduque	6,960.00
Masbate	14,760.00
Mindoro	14,580.00
Misamis Occidental	12,480.00
Misamis Oriental	23,280.00
Mountain Province	26,580.00
Negros Occidental	54,720.00
Negros Oriental	25,020.00
Nueva Ecija	48,000.00
Nueva Vizcaya	13,800.00
Palawan	11,220.00
Pampanga	38,520.00
Pangasinan	76,980.00
Quezon	63,900.00

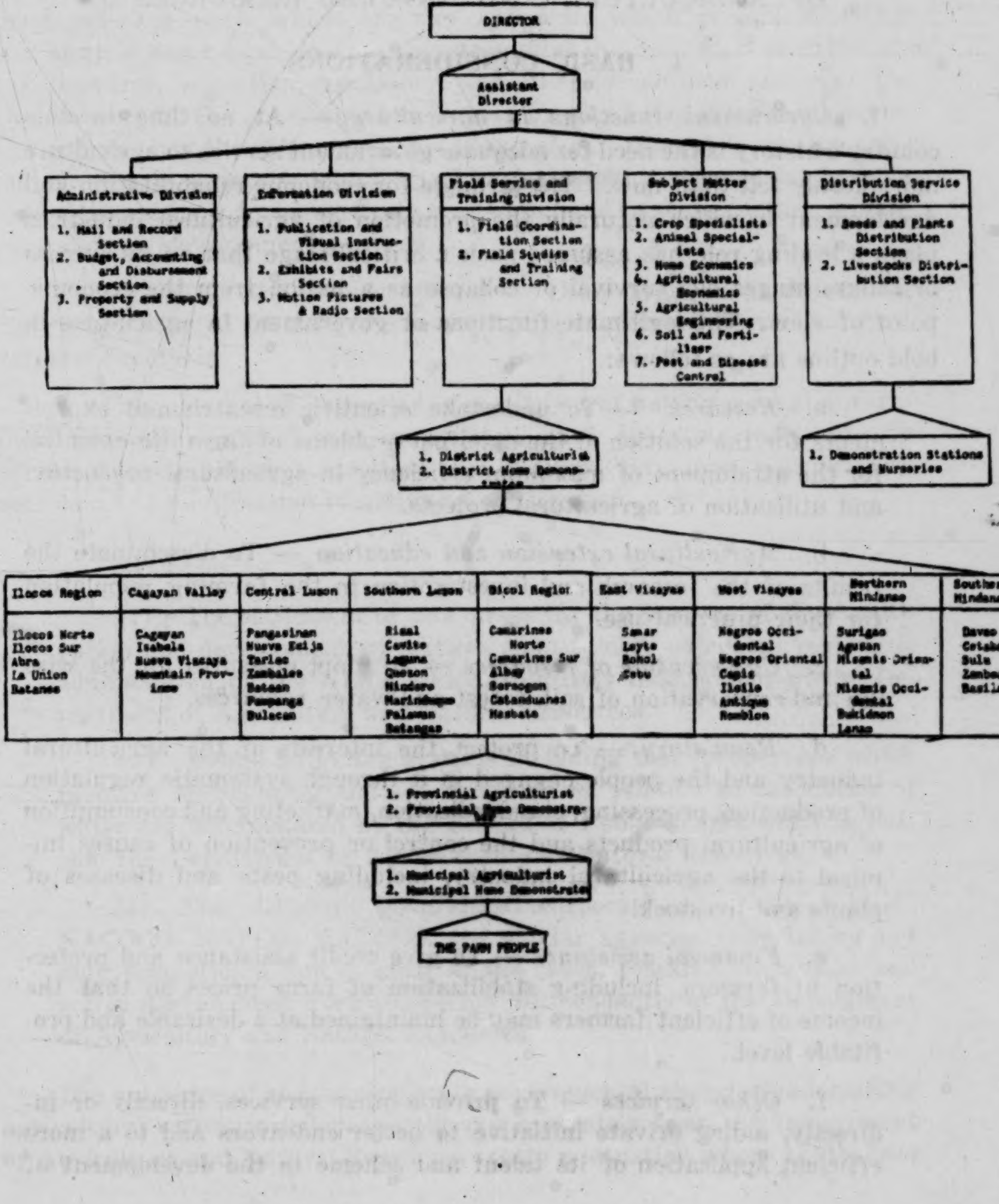
Rizal	48,240.00
Romblon	9,660.00
Samar	39,360.00
Sorsogon	14,220.00
Sulu	13,440.00
Surigao	17,340.00
Tarlac	30,000.00
Zambales	7,740.00
Zamboanga	19,440.00
TOTAL	₱1,249,980.00

SUNDRY EXPENSES

1.	Traveling expenses of personnel	₱ 500,000.00
2.	Freight, express and delivery service	10,000.00
3.	Postal, telegraph, telephone, cable and radio service	10,000.00
4.	Illumination and power service	5,000.00
5.	Repairs and rental of buildings and grounds	20,000.00
6.	Consumption of supplies and materials	100,000.00
7.	Printing and binding reports, documents and publications, and purchase and subscription of publications	30,000.00
8.	Traveling expenses of non-government employees	2,000.00
9.	Maintenance and repair of equipment and fixed property	40,000.00
10.	Equipment and furniture (including mobile units)	100,000.00
11.	Other services	20,000.00
12.	Three per cent contribution of Government Insurance	60,000.00
13.	For the operation and maintenance of nurseries and demonstration farms	500,000.00
14.	For demonstration projects with farmers	100,000.00
	Total for sundry expenses	₱1,497,000.00
	Total for salaries	1,994,380.00
	GRAND TOTAL	₱3,491,380.00

There are 1,207 towns and municipal districts in the Philippines, which need at least one municipal agriculturist each, and one municipal home demonstrator for every two municipalities for the proper functioning of the Agricultural Extension Service. However, only 1,112 municipal agriculturists and 306 municipal home demonstrators were provided for in the proposed Bureau of Agricultural Extension Service. As the organization is developed, however, an additional 95 municipal agriculturists and about 300 municipal home demonstrators will be needed.

In coordinating all the Agricultural Extension activities in the Government Service especially that of the Bureau of Plant Industry and Bureau of Animal Industry, the appropriations of the Livestock Extension Division, Item Nos. k-n of Act 2758; a-1 to k-1 and z of Act 118 and nine Breeding Stations amounting to ₱101,600.00 for the Animal Industry; and Item Nos. 52 to 69 inclusive and 148 amounting to ₱48,960 for the Plant Industry; and that of the Fiber Inspection Board Item Nos. 49-1 S.B., 2 S.B., and 3 S.B. in the amount of ₱19,140.00, which are to be transferred to the newly created Bureau together with the equipment and furnitures and other paraphernalia in these institutions which are identified as doing purely extension work there is still a savings of ₱169,700.00 from the total appropriation that is being requested for the proposed Bureau provided that the contributions of the provincial and municipal governments to the agricultural fund as per Act 85 remain intact as of 1950.


DIRECTOR
Assistant Director
Administrative Division
1. Mail and Record Section
2. Budget, Accounting and Disbursement Section
3. Property and Supply Section
Information Division
1. Publication and Visual Instruction Section
2. Exhibits and Fairs Section
3. Motion Pictures & Radio Section
Field Service and Training Division
1. Field Coordination Section
2. Field Studies and Training Section
Subject Matter Division
1. Crop Specialists
2. Animal Specialists
3. Home Economics
4. Agricultural Economics
5. Agricultural Engineering
6. Soil and Fertilizer
7. Pest and Disease Control
Distribution Service Division
1. Seeds and Plants Distribution Section
2. Livestocks Distribution Section
1. District Agriculturist
2. District Home Demonstrator
1. Demonstration Stations and Nurseries
Ilocos Region
Ilocos Norte
Ilocos Sur
Abra
La Union
Batanes
Cagayan Valley
Cagayan
Isabela
Nueva Vizcaya
Mountain Province
Central Luzon
Pangasinan
Nueva Ecija
Tarlac
Zambales
Bataan
Pampanga
Bulacan
Southern Luzon
Rizal
Cavite
Laguna
Quezon
Mindoro
Marinduque
Palawan
Batangas
Bicol Region
Camarines Norte
Camarines Sur
Albay
Sorsogon
Catanduanes
Masbate
East Visayas
Samar
Leyte
Bohol
Cebu
West Visayas
Negros Occidental
Negros Oriental
Capiz
Iloilo
Antique
Romblon
Northern Mindanao
Surigao
Agusan
Misamis Oriental
Misamis Occidental
Bukidnon
Lanao
Southern Mindanao
Davao
Cotabato
Sulu
Zamboanga
Basilan
1. Provincial Agriculturist
2. Provincial Home Demonstrator
1. Municipal Agriculturist
2. Municipal Home Demonstrator
THE FARM PEOPLE

PHILIPPINE ASSOCIATION OF AGRICULTURISTS

PROPOSAL FOR REORGANIZATION OF THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

I. BASIC CONSIDERATIONS

1. *Government functions in agriculture* — At no time in this country's history is the need for adequate government service to agriculture more keenly felt than now. The struggle for economic rehabilitation and development in which naturally the promotion of agricultural industries plays a leading role has assumed such a critical stage that on its success or failure hinges our survival or collapse as a nation from the economic point of view. The legitimate functions of government in agriculture in bold outline are as follows:

a. *Research* — To undertake scientific research and experiments for the solution of the manifold problems of farm life essential for the attainment of maximum efficiency in agricultural production and utilization of agricultural projects.

b. *Agricultural extension and education* — To disseminate the results of the research and investigation to the farming population for their practical use.

c. *Conservation of resources* — To adopt measures for the wise use and conservation of soil, forest and water resources.

d. *Regulatory* — To protect the interests of the agricultural industry and the people engaged in it through systematic regulation of production, processing, standardization, marketing and consumption of agricultural products and the control or prevention of causes inimical to the agricultural industry, including pests and diseases of plants and livestock.

e. *Financial assistance* — To give credit assistance and protection to farmers, including stabilization of farm prices so that the income of efficient farmers may be maintained at a desirable and profitable level.

f. *Other services* — To provide other services, directly or indirectly, aiding private initiative to better endeavors and to a more efficient application of its talent and scheme in the development of agricultural industries and in the raising of the standard of living of the rural population.

2. *The government in actual development enterprises* — Actual development work in agriculture undertaken by the government rests on the theory that in the present state of the country's under-developed economy, it is as much a vital concern of government to spearhead development projects which are new and from which private initiative shy away in order to show such private capital the way, as it is to undertake research, education, regulatory, and other promotional services. On the showing of the government in practically all of its agricultural development projects the efficacy of this phase of government service to agriculture is now seriously doubted and its continuation deemed inadvisable unless the theme is to demonstrate how to fail and to scare further private capital from development projects.

3. *Defects in the present system* — There are serious defects in the system adopted by the government in the exercise of its various agricultural functions.

a. Fundamental in character is the defect of having several government agencies identified with agricultural work operating independently of the Department of Agriculture and Natural Resources without any semblance of coordination of activities among them.

Examples:

(1) The settlement of new areas for the purpose of their cultivation and development by settlers from thickly populated regions is administered by the NLSA which is entirely independent of the Department of Agriculture and Natural Resources.

(2) Public irrigation systems including their proper use which involves agronomical and soil problems in relation to the duties of water are administered by the Bureau of Public Works which is outside the Department of Agriculture and Natural Resources.

(3) The different government corporations — the NARIC, NACOCO, NAFCO, NATOCO, and similar agencies undertaking not only promotional but in most of the cases, research, extension and actual development work all operate independently of the Department of Agriculture and Natural Resources.

The existence of so many separate governmental agencies undertaking agricultural activities independently and separately from the Department of Agriculture and Natural Resources create a situation where centralized planning, direction, and execution of national agricultural programs are rendered extremely difficult if not impossible.

b. There is much overlapping and lack of coordination of related activities in the different independent institutions on the one hand and the Department of Agriculture and Natural Resources on the other, and even among certain offices within the Department itself.

(1) Activities of the National Abaca and Other Fibers Corporation which partake of the nature of extension work with the abaca producers overlap with similar activities of the Fiber Inspection Service and the Bureau of Plant Industry. Likewise, activities of the National Tobacco Corporation relating to tobacco culture, production, curing and control of pests and diseases conducted with farmers, and those of the National Coconut Corporation with respect to the improvement of copra and utilization of coconut products overlap with similar activities of the Bureau of Plant Industry on tobacco and coconut, respectively.

(2) Certain phases of research on livestock and animal husbandry undertaken by the Bureau of Animal Industry, and on agronomy, horticulture and other phases of plant industry undertaken by the Bureau of Plant Industry, on the one hand, and of the College of Agriculture on the other, which undertakes research on both crops and livestock.

(3) Within the Department of Agriculture and Natural Resources itself, agricultural extension activities are carried out by different Bureaus without any attempt at coordination. There is an extension division in the Bureau of Plant Industry, the activities of which are naturally confined to crops, and an extension division in the Bureau of Animal Industry, the activities of which are confined to livestock. The Bureau of Fisheries, Bureau of Forestry and the Soil Survey and Conservation Division undertake a certain amount of extension work along their special lines. Some kind of extension work is also undertaken by the College of Agriculture, University of the Philippines and as already mentioned elsewhere by the different government corporations.

Similar overlapping of activities and lack of coordination are found in respect to regulatory and standardization service.

c. On the other hand, there are serious gaps in the chain of essential government services:

(1) There is no agency in which the function of administering and regulating agricultural production and distribution is centralized. Apart from rice, tobacco, abaca, and coconut products, such service is absolutely wanting.

(2) There is no office which handles research work in agricultural economics. Agricultural statistics is handled by the Bureau of the Census and Statistics, operating independently of the Department of Agriculture and Natural Resources.

4. *Purpose of proposed reorganization* — In general, the primary purpose of this reorganization proposal is to improve the efficiency of government service in agriculture through (1) elimination of everlapping and duplication of activities, waste and unnecessary conflict in the carrying out of the different phases of this service; (2) consolidation and/or coordination of related activities now performed by several independent agencies; (3) provision of needed services which are not now undertaken or otherwise undertaken in a desultory and ineffectual manner; (4) abolition of unnecessary offices or appendages, creation of needed offices not now existing or transfer of independent agencies so as to bring all these together under the Department of Agriculture and Natural Resources to facilitate central planning and direction of the nation's agricultural program.

II. PROPOSED DEPARTMENTAL STRUCTURE

1. It is proposed that in addition to the present Secretary and Undersecretary of the Department, another position of Undersecretary be created so as to have two Undersecretaries in the Department to cope with its increased administrative duties.

2. It is suggested that the present special divisions in the Office of the Secretary be slightly reorganized by replacing the Technical Division with that of Foreign Agricultural Relations. As reorganized the special divisions will be as follows:

a. Administrative Division
b. Legal Division
c. Division of Foreign Agricultural Relations
d. Publication Division

3. It is proposed that the operational functions of the Department be grouped into six major units as follows:

(1) Agricultural Research Administration
(2) Agricultural Extension Service
(3) Regulatory Service
(4) Agricultural Commodities Administration
(5) Agricultural Credit Administration
(6) Natural Resources Administration

Agricultural Research Administration

Under this unit will be grouped and coordinated the agricultural research activities of the Department of Agriculture and Natural Resources, the College of Agriculture, U. P., and other agencies if any. The main research institutions are to be constituted by the following:

(1) Bureau of Plant Industry and Fertilizer
(2) Bureau of Animal Industry
(3) Bureau of Soils and Agricultural Engineering
(4) Bureau of Agriculture Economics
(5) College of Agriculture, U. P.

Each research institution is provided sufficient leeway for the conduct of its specific research activities consistent with the principle of cooperation between them and coordination of related activities for purposes of better efficiency and economy. It is proposed that the research unit be headed by an Agricultural Research Administrator with the rank of a Commissioner, who shall direct and administer the research functions of the Department and be provided with the necessary staff to carry out this important and complicated function. Immediately below the Research Adminisrator may be organized an Office of Research Coordinator which shall coordinate the various activities of the following institutions:

Agricultural Extension Service

Under this unit all extension work now performed by various institutions, principal of which are the Bureau of Plant Industry, Bureau of Animal Industry, Division of Soil and Survey Conservation, Fiber Standardization Service and the various semi-government corporations, namely the NACOCO, NAFCO, NATOCO and the NARIC are consolidated and placed under one direction so as to achieve thereby a more systematic pattern of conducting agricultural extension work and do away with overlapping and duplication of related activities on the same subject matter. The head of the Agricultural Extension Service will be called the Director of Agricultural Extension.

Regulatory Service

Under this unit are consolidated all regulatory work pertaining to agriculture falling within the legitimate functions of the Department of Agriculture and Natural Resources, including quarantine, control of plant pests and diseases, and similar services which are more or less compulsory in character as distinguished from the research and educational phases of agricultural work. The head of the Regulatory Service will be called the Director of Regulatory Service.

Agricultural Commodities Administration

Under this unit are brought together the various activities relating to the administration of production, processing, marketing and distribution of agricultural commodities now undertaken by the semi-government corporations, including NACOCO, NAFCO, NATOCO, and the NARIC. It is proposed to group the agricultural commodities into the following categories descriptive of each commodity:

(1) Cereal Branch
(2) Animal and Fish Products Branch
(3) Fiber Branch
(4) Fat and Oil Branch
(5) Tobacco Branch
(6) Sugar Branch
(7) Fruit and Vegetable Branch
(8) Miscellaneous Commodity Branch

Under this scheme, it will be noted that every agricultural commodity will be taken care of and not only the principal ones as the case under the existing system. The head of each Branch will have the rank of a Bureau Director and the Agricultural Commodities Administrator who will be at the top of this organization will have the rank of a Commissioner.

Each Commodity Branch shall be responsible for administering production adjustment, processing, distribution, including the program of exportation and importation as well as standardization, inspection and grading with respect to the commodities over which it has jurisdiction.

Agricultural Credit Administration

This would be a new office under which all loans granted to farmers, processors and other agricultural producers should be organized and consolidated.

Natural Resources Administration

This unit is constituted by the following Offices:

(1) Bureau of Forestry
(2) Bureau of Lands
(3) Bureau of Fishery
(4) Bureau of Mines
(5) Office of Irrigation and Drainage

The Office of Irrigation and Drainage will administer all irrigation systems in the country including those now administered by the Bureau of Public Works, the Bureau of Lands and the newly created office in the Department of Agriculture and Natural Resources handling irrigation pumps.

THE BOARD OF DIRECTORS
PHILIPPINE ASSOCIATION OF AGRICULTURISTS

[illegible]

[illegible] systems in the country including those now administered by the Bureau of Public Works, the Bureau of Lands and the [illegible] in the Department of Agriculture and Natural Resources including [illegible] permits.

THE BOARD OF DIRECTORS
[illegible] COOPERATIVE ASSOCIATION OF AGRICULTURISTS

MANPOWER AND THE PHILIPPINE INVESTMENT PROGRAM

Introduction

A country interested in economic development must assess somewhere down the line its present and potential manpower resources. To begin with, it needs to determine the size of its existing labor force and its proportion to the total population. Similarly, knowledge regarding the composition of the labor force, especially its occupational distribution, is essential for a thorough understanding of the manner in which the country utilizes its economically active population and the impact of such an utilization on the nature of the country's economy. For purposes of programming and determining the adequacy of future manpower supplies, some notion needs be obtained with regard to anticipated growth of the labor force. It is also important to inquire into the qualitative attributes of the labor force. How skilled and trained is it at present? What facilities for training the future recruits are in existence or planned? Where will the manpower surpluses occur and in what geographic areas will the needs arise? Are there any plans for geographic reallocation of manpower through incentive schemes or otherwise? Lastly, some relevant comparisons may be made with economically more advanced countries to determine the direction which should be followed in order to attain the next step in economic progress.

Population

According to the latest census, the population of the Philippines was 16,000,303 in 1939. Official estimates indicate that by the middle of 1946 the population had increased to 19,067,000. Thus, in spite of wartime losses the population grew by over 3,000,000 persons. This represents an increase of about 19 percent in the course of seven and one half years, or an average rate of increase of about 2.4 percent per annum. On the basis of the same rate of growth the population may be expected to reach 20,425,000 by the middle of 1949. Similarly, if the population continues to grow at a similar rate during the next decade, it will reach 25,796,000 by July 1959, (see Table I, Appendix). No specific account was taken in these projections of the impact of economic development on the rate of population growth during the next decade.

The sex composition of the enumerated population of the Philippines showed a slight preponderance of males. According to the census, there were 8,065,281 males and 7,935,032 females in the Philippines in 1939. Probably as a result of the war, the present sex structure of the population is somewhat less favorable to the males. Such a shift of necessity creates a somewhat greater reliance on women as a factor in the labor force. Unless a somewhat higher proportion of women is drawn into the labor force, a relatively smaller group of workers now has to support, the increased population. This results in lower living standards.

The age composition of the population is also very important from the standpoint of the actual and potential labor force. The Philippine population is a young one; its median age is 18 years as compared with about 29 in the United States. The Philippine population is what demographers term progressive (the percentage of persons 0-14 is more than twice that of persons 50 and over), whereas the U.S. population is regressive (the percentage of persons 0-14 is less than twice that of persons 50 and over). This "progressive" feature of a given population suggests that it possesses considerable potentialities of growth and development if survivorship is improved in the middle and higher age groups. On the other hand, if the low life expectancy continues, the population may remain "progressive" for a long time without actually capitalizing on its potentialities for maturing (see Tables II and III, Appendix).

In the Philippines as in most other economically underdeveloped countries, one of the factors impeding the attainment of a higher income per head is the existence of so many persons to be supported by comparatively few fully matured workers. If it is assumed that persons 0-14 and over 65 (dependents) are relying upon those aged 15-64 (producers) for their economic support, we find that in the United States there were in 1940 some 47 dependents to 100 producers whereas in the Philippines the ratio was 87 dependents per 100 producers. Although this is admittedly a rough measure of dependent-producer relationship, the disparity is so pronounced that it must be recognized as an important problem in the over-all economic picture of the Philippines. Unless life expectancy is increased substantially in the near future the situation will not have improved much by 1959 as evidenced by the figures in Table III of the Appendix.

Labor Force

The most reliable data on the manpower of the Philippine Islands are derived from the general census of 1939. According to these census results out of a total population of 16 million persons, 6,873,007 individuals or 43 percent were gainfully occupied. This percentage participation in the labor force may be regarded as both normal and satisfactory for a country with a very young population whose medium age is slightly over 18 years. However, as the population grows older and the ratio of the productive elements to those economically dependent upon them increases, it may be possible to raise not only the absolute size of the labor force but also its proportion to the total population. (In Japan 46 percent of the population is reported as gainfully occupied.) In the meantime, however, relatively little should be expected in the way of additional manpower by means of increasing the ratio of the labor force to the total population.

The size of the present labor force is basic to most considerations of economic development. However, since the census benchmark is almost ten years old, only a rough estimate of the size of the labor force may be offered at this time. On the basis of the above assumption of a fairly stable ratio of the labor force to the total population, the present manpower resources may be estimated at 8.5 millions, or 43 percent of a total population of 19.7 million persons. This represents a total labor force increase of approximately 1.6 millions in the course of nine years or an average annual increase of slightly under 180,000. Consequently, in the formulation of an economic development program it seems reasonable to assume a future growth in the size of the labor force somewhere in the order of magnitude of 200,000 annually.

Attached are two tables containing detailed breakdowns of the labor force by major occupational categories. Table I represents the labor force as reported in the census. Table 2 constitutes an adjustment of the reported labor force in accordance with generally accepted definitions of the concept. Several basic revisions of Table 1 were necessary in order to determine the actually gainfully occupied population. The first revision required the elimination of housewives who are not engaged in the market economy and therefore are not customarily regarded as an integral component of the labor force. This operation reduced the labor force by 3,145,763. The second major change involved the addition of farmers' wives to the agricultural labor force. Discussions with Mr. Ray Hurley (Census Expert for the Philippine Census of 1939) revealed that the census category of "unpaid family workers" failed to include the farmers' wives who shared their time between household duties and farm work. Since it is apparently customary for farmers' wives in the Philippines, as in most other countries, to lend an active hand with farm work especially during the peak seasons, their inclusion in the labor force is essential in order to secure a true picture of the economically active population. This revision necessitated the addition of 1,552,277 agricultural workers to the labor force on the assumption that roughly every farmer had a wife who helped him in the operation of the farm. With these two adjustments, the labor force of the Philippines as presented in Table 2 may be considered as encompassing the entire economically active population in the usual meaning of the term.

TABLE 1

GAINFUL WORKERS 10 YEARS OLD AND OVER, BY GENERAL OCCUPATION GROUPS AND SEX FOR THE PHILIPPINES: 1939

(as reported in census)

Occupation group	Number			Per cent of distribution			Per cent of total	
	Both Sexes	Male	Female	Both Sexes	Male	Female	Male	Female
TOTAL	8,466,493	4,219,278	4,247,215	100.0	100.0	100.0	49.8	50.2
Agriculture	3,456,370	2,981,551	474,819	40.8	70.7	11.2	86.3	13.7
Domestic & personal service	3,478,084	123,508	3,354,576	41.1	2.9	79.0	3.6	96.4
Professional service	103,415	65,438	37,977	1.2	1.6	0.9	63.3	36.7
Public service (not elsewhere classified)...	49,620	48,984	636	0.6	1.2	(1)	98.7	1.3
Fishing	180,569	175,841	4,728	2.1	4.2	0.1	97.4	2.6
Forestry & hunting	26,820	24,903	1,917	0.3	0.6	(1)	92.9	7.1
Mining & quarrying	47,019	46,625	394	0.6	1.1	(1)	99.2	0.8
Manufacturing & mechanical ind.	601,335	333,976	267,359	7.1	7.9	6.3	55.5	44.5
Transportation & communication	203,596	202,449	1,147	2.4	4.8	(1)	99.4	0.6
Clerical	48,899	44,904	3,995	0.6	1.1	0.1	91.8	8.2
Trade	270,766	171,099	99,667	3.2	4.1	2.3	63.2	36.8

(1) Less than 0.1 per cent.

Total population	Total labor force	Per cent labor force is of total population
16,000,303	8,466,493	52.9%

SOURCE: Philippines Census 1939. Summary and General Report, Volume 2.

TABLE 2— GAINFUL WORKERS 10 YEARS OLD AND OVER, BY GENERAL OCCUPATION GROUPS AND SEX, FOR THE PHILIPPINES: 1939
(as adjusted by IBRD)

Occupation group	Number			Per cent of distribution			Per cent of total	
	Both Sexes	Male	Female	Both Sexes	Male	Female	Male	Female
TOTAL	6,873,007	4,219,278	2,653,729	100.0	100.0	100.0	61.4	38.6
Agriculture	5,008,647	2,981,551	2,027,096	72.9	70.6	76.4	59.5	40.5
Domestic & personal service	332,321	123,508	208,813	4.8	2.9	7.8	37.2	62.8
Professional service	103,415	65,438	37,977	1.5	1.6	1.4	63.3	36.7
Public service (not elsewhere classified)	49,620	48,984	636	0.7	1.2	0.0	98.7	1.3
Fishing	180,569	175,841	4,728	2.6	4.2	0.2	97.4	2.6
Forestry & hunting	26,820	24,903	1,917	0.4	0.6	0.1	92.9	7.1
Mining & quarrying	47,019	46,625	394	0.7	1.1	0.0	99.2	0.8
Manufacturing & mechanical ind.	601,335	333,976	267,359	8.8	7.9	10.1	55.5	44.5
Transportation & communication	203,596	202,449	1,147	3.0	4.7	0.0	99.4	0.6
Clerical	48,899	44,904	3,995	0.7	1.1	0.2	91.8	8.2
Trade	270,766	171,099	99,667	3.9	4.1	3.8	63.2	36.8

Total population	Total labor force	Per cent labor force is of total population
16,000,303	6,873,007	43.0%

SOURCE: Basic data from Philippines Census 1939. Summary and General Report, Volume 2.

Occupational Structure

The nature of a given economy may be described quantitatively in numerous ways, but few of them are as indicative of the true manner in which the populace participates effectively in the productive processes and earns its livelihood as the occupational pattern of the labor force. In the case of the Philippines, the occupational distribution (see Table 2 above) reveals the predominantly agricultural character of the economy. Out of a total of 6,873,007 gainful workers, 5,008,647 or almost three-fourths were engaged in agriculture. The remaining 27 percent of the economically active population earned their livelihood in a variety of ways. Manufacturing and mechanical industries (including construction and public utilities) employed 8.8 percent of the labor force. The next field of importance from the standpoint of workers engaged were the domestic and personal services with 4.8 percent of the labor force. Trade accounted for 3.9 and transportation and communication for 3 percent. Fishing gave employment to 2.6 percent. All the professions combined were staffed by 1.5 percent of the labor force. The extractive industries, public service and clerical occupations each gave employment to .7 percent of the labor force.

The labor force of a country may be conveniently summarized in the form of three basic divisions—those engaged in primary, secondary and tertiary industries. In the primary industries are included agriculture, forestry and fishing—secondary industries include manufacturing, mining and construction—tertiary ones include professions, services, finances, utilities, domestics, etc. This grouping follows Colin Clark's general pattern. Table 3 following reveals that in the case of the Philippines 76 percent were in the primary industries; 9.4 percent in the secondary industries and 14.7 percent in tertiary industries. Such an occupational distribution with its heavy emphasis on primary industries results in an unbalanced economy. Moreover, the overwhelming preponderance of the primary industries normally associated with relatively low productive power, is responsible for the unsatisfactory per capita real income of the Philippine population. This occupational distribution offers convincing proof of the desirability of developing secondary industries, even if they entail no more than the elementary processing of raw materials produced on the Islands.

The dearth of processing industries in the Philippines is amply illustrated by the fact that only 9.4 percent of the labor force is engaged in secondary industries. The true measure, however, of the almost com-

TABLE 3— GAINFUL WORKERS IN THE PHILIPPINES BY MAJOR OCCUPATION GROUPS, 1939

(Adjusted by IBRD)

Occupation	Both Sexes	Percentage Distribution	Male	Female
I *Primary*				
Agriculture	5,008,647	72.9	2,981,551	2,027,096
Fishing	180,569	2.6	175,841	4,728
Forestry & Hunting	26,820	.4	24,903	1,917
Subtotal	5,216,036	75.9	3,182,295	2,033,741
II *Secondary*				
Mining & Quarrying	47,019	.77	46,625	394
Mfg. & Mech. Indust.	503,996	7.3	236,703	267,293
A. Handicrafts	426,180	6.2	164,780	261,400
B. "Industry Proper	77,816	1.1	71,923	5,893
Bldg. and Construction	94,501	1.4	94,462	39
Subtotal	645,516	9.4	377.790	267,726
III *Tertiary*				
Electricity, Light, Gas	2,838	.1	2,811	27
Personnel Service	332,321	4.8	123,508	208,813
Professional Service	103,415	1.5	65,438	37,977
Public Service	49,620	.7	48,984	636
Transportation & Comm.	203,596	3.0	202,449	1,147
Clerical	48,899	.7	44,904	3,995
Trade	270,766	3.9	171,099	99,667
Subtotal	1,011,455	14.7	659,193	352,262
GRAND TOTAL — all workers	6,873,007	100.0	4,219,278	2,653,729
TOTAL POPULATION	16,000,303		8,065,281	7,935,022
Per cent labor force is of total population	43.3%		52.3%	33.4%

SOURCE: Philippines Census 1939. Summary and General Report, Volume 2.

plete absence of what might be called "industry proper" in the full sense of the meaning of the term under conditions of modern industrialism, is only revealed when the internal composition of the group "manufacturing and mechanical industries" is broken down into its component parts (see Appendix Table IV). An analysis of this group reveals that although it employed 7.3 percent of the total labor force, fully 6.2 percent were engaged in what may properly be termed handicrafts. Thus, only slightly more than one percent of all the economically active population of the Philippines were engaged in manufacturing of the modern variety. As will be later pointed out, a substantial proportion of those engaged in handicrafts, carried them on as a supplementary occupation to compensate for the heavy incidence of agricultural underemployment and the resulting low incomes.

The tertiary industries which include a conglomeration of services accounted for only 14.7 percent of the Philippine labor force. Although better represented than secondary industries, they nevertheless fell short of what might be regarded as a normally desirable level. In part, of course, their under-representation in the economy is the direct consequence of the virtual absence of secondary industry and the low level of income in the primary industries. The most striking evidence of the virtual absence of industry is the fact that the electric light, power and gas employed only 0.1 percent of the labor force. Public service and clerical occupations employed only 0.7 percent each. The former should probably be doubled to include teachers, but such an adjustment would reduce the professionals to half of their 1.5 percent. Even trade with its 3.9 percent and transportation and communication with 3.0 percent reflect the importance of foreign commerce rather than a well developed domestic system of distribution. Perhaps only personal services which gave employment to 4.8 percent of the labor force may be said to have attained a proportion corresponding to their appropriate role in a properly balanced economy.

Some notion of the relative position of the Philippines with regard to the distribution of its labor force among primary, secondary and tertiary industries may be secured from Table 4 below. The obvious conclusion from this international comparison is that the Philippine economy has a somewhat higher preponderance of primary industry than even such an economically undeveloped country as India and a decidedly long way to go before achieving the occupational distribution of Japan.

TABLE 4

INTERNATIONAL COMPARISONS OF OCCUPATIONAL DISTRIBUTION OF THE LABOR FORCE, 1940

	Occupation Distribution of Labor Force									
	PRIMARY		SECONDARY		TERTIARY		OTHER		TOTAL	
Country	No. of Workers	% of Total	No. of Workers	% of Total	No. of Workers	% of Total	No. of Workers	% of Total	No. of Workers	% of Total
Philippines	5,216,036	75.9	645,516	9.4	1,011,455	14.7	——	——	6,873,007	100.0
Japan	14,686,731	49.6	5,950,801	20.1	8,411,142	28.4	570,966	1.9	29,619,640	100.0
India (in thousands)	100,037	67.3	15,697	10.5	25,300	17.0	7,782	5.2	148,816	100.0
United States	9,141,112	17.6	16,374,676	31.5	24,451,979	47.0	2,052,256	3.9	52,020,023	100.0
Ireland	648,350	48.4	201,564	15.1	438,235	32.7	50,965	3.8	1,339,114	100.0
Denmark	562,289	28.5	606,383	30.8	789,001	40.0	13,623	0.7	1,971,301	100.0
New Zealand	175,113	27.2	156,858	24.3	283,697	44.0	28,780	4.5	644,448	100.0
Mexico	6,241,000	72.4	747,000	8.8	1,464,000	16.9	164,000	1.9	8,616,000	100.0

NOTE: Primary — agriculture, forestry and fishing
Secondary — mining, manufacturing and construction
Tertiary — trade, finance, services, Government, etc.

SOURCE: Philippines Census 1939. Summary and General Report, Volume 2:
ILO Yearbook of Labor Statistics 1945-46.

Manpower and the Investment Program

Having described the general characteristics and attributes of Philippine manpower, we now arrive at the relation of manpower to the proposed investment and economic development program. To begin with it is necessary to determine the order of magnitude of manpower requirements for the agricultural and industrial rehabilitation and development of the Philippines during the period of 1947-52. Once the requirements are established they may be compared with the estimated supplies with a view to determining the likelihood of manpower deficits or surpluses. Since the character of the economic development of the Philippines envisages a somewhat greater emphasis on secondary and tertiary industries than was the case before the war, the adequacy of manpower resources must be determined not only quantitatively but also in qualitative terms. To meet the investment goals there must be an adequate supply of various skills, occupations and technical training. In its absence not only is the pace of the investment program likely to be retarded but the various manpower bottlenecks may well generate an inflationary pressure thereby raising the cost of realizing the rehabilitation and development program and hindering its fulfillment.

Manpower in Primary Industries

Because agricultural labor plays such a vital role in the Philippines, it warrants first consideration in our analysis. According to Table 5 below, fully half of the agricultural manpower was engaged in the production of rice in 1939. The remaining half of agricultural labor was distributed among eight other major cultures as well as miscellaneous farm pursuits in the following proportions: rice (palay) 52.8 percent; corn 19.7 percent; coconut 8.9 percent; abaca 4.3 percent; sugar cane 5.0 percent; tobacco 1.7 percent; fruit 0.4 percent; livestock and poultry 0.5 percent; and others 6.7 percent.

Since rice farming and some of the other branches of Philippine agriculture do not absorb more than three-fourths of the farmers' time in the course of a year, considerable seasonal agricultural unemployment is believed to have existed in the economy. Furthermore, this unemployment was probably accentuated by the presence of many more workers in agriculture than was absolutely essential for the prevailing or even a higher level of farm output. There are reasons for believing that many of the small farms could have been adequately attended even if a substantial reduction in the existing agricultural labor force were effected. The other two primary industries—fishing and forestry—engaged 2.6 and 0.4 percent respectively of the Philippine labor force.

TABLE 5

DISTRIBUTION OF FARMERS AND FARM LABORERS, PAID AND UNPAID, IN AGRICULTURE BY KIND OF FARM AND SEX IN THE PHILIPPINES, 1939

Kind of Farm	Number of Workers Both Sexes	Percentage Distribution Both Sexes	Number of Workers Male	Number of Workers Female
Abaca farm	214,646	4.3	149,410	65,236
Coconut	446,063	8.9	276,849	169,214
Corn	989,023	19.7	555,749	433,274
Fruit	19,928	0.4	12,025	7,903
Livestock and Poultry	23,863	0.5	18,750	5,113
Palay	2,646,463	52.8	1,508,754	1,137,709
Sugar cane	248,051	5.0	195,306	52,745
Tobacco	84,722	1.7	42,308	42,414
Other	335,888	6.7	222,400	113,488
TOTAL	5,008,647	100.0	2,981,551	2,027,096

SOURCE: Philippines Census 1939. Summary and General Report, Volume 2.

Primary industries agriculture, fishing and forestry—gave employment to three-fourths of the labor force before the war and its postwar labor requirements continue to loom large in the Philippine economy. However, because of the selective restoration of war-devastated agricultural production, the manpower requirements of Philippine agriculture, fishing and forestry in 1947 are estimated below the actual employment in these fields in 1939. Based on a constant ratio of manpower to output, the manpower requirements in 1952 of Philippine agriculture, fishing and forestry, are estimated at 4,033,000 compared with an actual figure of 3,669,000 in 1939. On the other hand, the supply of manpower for these primary pursuits in 1952 is estimated roughly somewhere at 5,000,000 yielding a surplus in the order of magnitude of 1,000,000 persons (see Appendix Tables V and VI).[1]

The above surplus of 1,000,000 workers which is expected to exist by 1952 is entirely the result of the growth in population and the consequent increase in the size of the labor force. An all-inclusive estimate of the likely surplus in 1952 would also have to take cognizance of the several forms of unemployment which existed among agricultural workers in the Philippines in 1939. To begin with, there were about 130,000 agricultural workers reported as unemployed in the 1939 census. To this number must be added a considerable volume of seasonally unemployed agricultural manpower. For instance, as previously mentioned rice farming which employed half of all the agricultural manpower is said to occupy the workers for no more than eight months in any single year.[2] Prewar data on additional occupations suggest that a considerable volume of seasonal unemployment remained unutilized. Finally, the low per capita real income in Philippine agriculture suggests that a substantial volume of underemployment prevailed. Just how much manpower could have been withdrawn from agriculture without adversely affecting total farm output is difficult to estimate, but the belief is that it was substantial.

Additional Occupations

The widespread prevalence of agricultural underemployment is somewhat alleviated by the resort on the part of large numbers of farmers and farm laborers to supplementary gainful pursuits. Table 6 below indicates the extent of the prevalence of additional occupations besides the usual ones and the nature of their distribution. It is quite significant to note the large proportion of farm manpower which engages in supplementary pursuits either in other types of farming or in somewhat more removed spheres of the economy. However, there is probably a great deal of room for expanding the scope of additional occupations in the near future.

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[1] Calculations of the requirements figures were based on the employment data as reported in the 1939 Census, without adjusting for female employment (see pages 4 and 6). For the sake of consistency, the calculations of supplies were made on the same basis. Although this method is quite justifiable, it probably underestimates somewhat the over-all surplus.

[2] See Tables on seasonal employment patterns in Philippines in the part of this report devoted to agriculture.

One particularly important area of expansion of additional occupations would be in the construction field. Since the dry season is usually a slack season for rice growers, the use of more farm manpower for road construction and other types of building activities would be most desirable to cope with the needs of this labor intensive industry. Similarly, the location of food processing plants in localities with seasonal labor surpluses would constitute an important step in the direction of solving food requirements as well as developing a domestic basis for some consumers' goods industries.

Manpower in Secondary Industries

In the Philippines the problem of securing adequate manpower for secondary industries is considerably more complicated than for primary ones. From the purely quantitative standpoint, the anticipated surplus of about 1,000,000 workers in primary industries should more than suffice for the realization of the investment plans in construction, mining, and industry proper. The total volume of employment in these fields in 1939 amounted to only 65 percent of the estimated manpower surplus. However, mere numbers are no guarantee of the availability of the necessary skills, occupations and technical training. Successful implementation of the over-all investment program will require large numbers of skilled construction workers as well as of properly trained operation and maintenance crews.

By far the most important single group of skilled workers that must be readily made available to the development program consists of the construction trades. This group is a critical one both from the standpoint of timing and of training. On the one hand, construction methods are still generally on such a technological level that a substantial proportion of the workers must be highly skilled. This usually requires the serving of a long apprenticeship. On the other hand, the workers are needed as soon as the program is launched since construction work constitutes almost its first step. To prevent the skilled construction trades from becoming a serious bottleneck, careful plans must be laid at the outset for the training of an adequate number of workers. A general

TABLE 6A

PERSONS 10 YEARS OLD AND OVER CLASSIFIED BY USUAL OCCUPATION AND NATURE OF ADDITIONAL OCCUPATION FOR THE PHILIPPINES: 1939

		Total Workers in Primary Occupations With Additional Occupations	**1,139,833**
Usual Occupation		Distribution of Additional Occupations	
I. *Primary*	**3,663,759**	**I. *Primary***	**770,264**
Agriculture	**3,456,370**	**Agriculture**	**530,359**
Forestry & hunting	**26,820**	**Forestry & hunting**	**63,503**
Fishing	**180,569**	**Fishing**	**176,402**
		II. *Secondary*	**234,370**
		Manufacturing & mechanical industries	**158,998**
		A. Handicrafts	**158,998**
		B. "Industry Proper"	**none**
		Mining and quarrying	**none**
		Building and construction	**75,372**
		III. *Tertiary*	**62,971**
		Personal service	**10,501**
		Clerical and professional service	**7,821**
		Public service	**none**
		Transportation and communication	**none**
		Trade	**44,649**
		IV. Others	**72,228**
		GRAND TOTAL	**1,139,833**

TABLE 6B

PERSONS 10 YEARS OLD AND OVER CLASSIFIED BY USUAL OCCUPATION AND NATURE OF ADDITIONAL OCCUPATION FOR THE PHILIPPINES: 1939

Total Workers in Secondary Occupations With Additional Occupations 88,292

Usual Occupation		Distribution of Additional Occupations	
		I. *Primary*	59,950
		Agriculture	49,271
		Forestry & hunting	1,157
		Fishing	9,522
II. *Secondary*	645,516	II. *Secondary*	14,056
Manufacturing & mechanical industries	506,238	Manufacturing & mechanical industries	11,638
A. Handicrafts	428,422	A. Handicrafts	11,638
B. "Industry Proper"	77,816	B. "Industry Proper"	none
Mining and quarrying	47,019	Mining and quarrying	none
Building and construction	92,259	Building and construction	2,418
		III. *Tertiary*	9,708
		Personal service	3,354
		Clerical and Professional service	1,432
		Public service	none
		Transportation and communication	none
		Trade	4,922
		IV. Others	4,578
		GRAND TOTAL	88,292

TABLE 6C

PERSONS 10 YEARS OLD AND OVER CLASSIFIED BY USUAL OCCUPATION AND NATURE OF ADDITIONAL OCCUPATION FOR THE PHILIPPINES: 1939

Total Workers in Tertiary Occupations With Additional Occupations 778,396

Usual Occupation		Distribution of Additional Occupations	
		I. *Primary*	343,225
		Agriculture	327,541
		Forestry & hunting	3,506
		Fishing	12,178
		II. *Secondary*	322,103
		Manufacturing & mechanical industries	319,863
		A. Handicrafts	319,863
		B. "Industry Proper"	none
		Mining and quarrying	none
		Building and construction	2,230
III. *Tertiary* TOTAL	1,017,583	III. *Tertiary*	88,260
Elec. light, power and gas	2,838	Personal service	26,692
Personal service	332,821	Clerical and professional service	4,687
Professional service	103,415	Public service	none
Public service	49,620	Transportation and communication	none
Transportation and communication	203,596	Trade	56,881
Clerical	48,899	IV. Others	24,810
Trade	270,766	GRAND TOTAL	778,396

SOURCE: Philippines Census 1939, Summary and General Report, Volume 2.

guide to the magnitude of the training program may be secured from a perusal of Table 7 below. It suggests that the current construction labor force of 125,000 will have to be brought up to 136,000 by 1951. Taking also into account the withdrawals from the construction labor force, a total of about 24,000 new trained workers, or at the rate of 8,000 a year, may be required between now and 1951.

The operation and maintenance of industry proper may also be expected to require more workers by 1952 than either prewar or today. The establishment of some new industries as well as the expansion and modernization of others, will make its claim for additional trained manpower. According to Table 8 below, a need will exist for some 314,000 industrial workers by 1952 as compared with 234,000 in 1938 and 195,000 in 1948. Thus, between now and 1952 some 120,000 new industrial workers will be needed. If allowance is also made for replacement, an entry of as many as 150,000 new industrial workers might be required. These industrial workers will include some unskilled laborers and some highly skilled personnel of great responsibility, but mostly they will probably consist of semi-skilled machine tenders which are so typical of modern technology. Training plans and facilities will have to be devised for these groups, and an essentially agricultural people will have to be inculcated with the principles of machine maintenance. On the whole, the industrial workers are less likely to constitute a bottleneck than the construction trades. By and large their training periods should be shorter and there is more time available in which to train them.

The planned expansion in mining and quarrying activities is on a rather limited scale. Total prewar employment in these fields was reported at 47,000 in 1939. Allowing both for replacements and a moderate increase in the labor force, an additional 10,000 workers may be required by 1952. This should not prove too difficult a task since few new types of mining are planned.

Manpower in Tertiary Industries

Since manpower requirements of tertiary industries are derivative rather than direct, being derived from the character and magnitude of primary and secondary industries, they are somewhat difficult to project. There are, however, several ways of approaching the problem. The simplest way would be to allow a growth proportionate to the population. On this basis, the tertiary industries would increase from roughly 1 million in 1939 to roughly 1,350,000 in 1952. Because of the increase in per capita real income which may be anticipated both because of the assume improved efficiency and a slight shift from primary to secondary

INDUSTRIAL MANPOWER REQUIREMENTS

Explanatory Note

1. Argentine investment in industry during 1935 totalled about $1,250 million.
2. Mexico's ratio of invested capital to gross value of production during 1944 rose to 1 to 1.35.
3. Capital investment includes the following: Manufacturing (exclusive of handicrafts), mining, power, and lumber. Investment figures exclude cash on hand and accounts receivable.
4. Value of production for manufacturing industries includes only those which show a size of production from $500 and over. Source: Yearbook on Philippine statistics, Table 166, Page 221.
5. Taken from yearbook of Philippine Statistics 1946.
6. Total fixed capital investment for 1948 is established as follows:

1938 investment	$336.6 million	
Less handicrafts etc.	93.3	
Sub Total	243.3	
Plus NDC Investment	16.0	
	$259.3	$259.3
War Damages at 82%	276.6	
Less handicrafts etc.	85.8	
Sub Total	190.8	
Plus NDC losses	7.0	
	197.8	197.8
Estimated capital inv. as of 1945		$ 61.5 million

The rate of construction investment in Manila is used as an index for establishing rate of re-investment in industry.

	Manila	National
1946	23	34
1947	36	44
1948	36	44
Total Inv.		$122 millions.
Plus balance after war damages		61.5
Estimated 1948 total		183.5 or $184.0 millions

7. All values are based on 1938 prices.

8. Estimated at 30% below 1938 level of physical output. Source: Joint Philippine-American Finance Commission Report—1947; table 3 page 104.

9. Amount of investment per year (1949-52) based on estimates submitted to IBRD exclusive of transportation and handicrafts but including agricultural processing and lumber industries.

10. Based on expected efficiency rate of output as compared to other countries.

11. Source: Yearbook of Philippine Statistics—1946.

12. Estimate based on the assumption that with damage to mechanical equipment an increase of manpower over that of 1938 took place for the partial maintenance of physical output as compared to 1938. Physical output per industrial worker was assumed 15% lower than 1938 level.

13. Based on expected improvement of mechanical production and increased efficiency.

During 1946 it is estimated that total value of investment was approximately 15% over the Manila rate of construction. For 1947-48 approximately 12%.

Source of War Damage data: Report of the technical committee to the President of the Philippines—1946: Appendix to hearings before the committee on Insular Affairs House of Representatives 79th Congress 2nd Session on S1610, U.S. Government Printing Office 1946.

TABLE 7

PROJECTED MANPOWER REQUIREMENTS IN CONSTRUCTION INDUSTRY — 1949-1952

Year	Population	Per Capita Value	Total Estimated Value of Construction	No. of workers	Volume of Construction per Worker	Net Change of Labor Force by Year +	Net Change of Labor Force by Year —	Remarks
1940	17,000,000	$ 5.00	85,000,000	94,500	$ 900	——	——	Manila av. $ 9.00
1947	19,511,000	$10.00	195,000,000	122,000	$1600[1]	27,500	——	Manila av. $18.00
1948	19,964,000	$10.00	200,000,000	125,000	$1600	3,000	——	
1949	20,424,000	$ 9.40	194,900,000[2]	122,000	$1600	——	3,000	
1950	20,893,000	$ 9.40	196,800,000[2]	123,000	$1600	1,000	——	
1951	21,380,000	$10.80	225,800,000[2]	136,000	$1600	13,000	——	
1952	21,880,000	$ 7.70	169,700,000[2]	106,000	$1600	——	30,000	
						+ 44,500	— 33,000	
						— 33,000		
						+ 11,500		

[1] Based on twice pre-war labor values less 10% efficiency rate.

[2] Based on estimated capital requirements of development program, see summary below.

1949		1950	1951	1952
150.4	Total Industrial program	146.1	169.1	113.3
48.9	Less — Transportation equipment	43.8	38.8	36.7
101.5		102.3	130.3	76.6
11.4	Plus Agricultural construction (20%)	13.00	14.0	11.6
60.0	Plus War Damage construction	60.00	60.0	60.0
21.5	Plus 25% Prewar costs	21.5	21.5	21.5
194.9	Total	196.8	225.8	169.7

Total estimated value of Construction 1949-1952 = $787.2

For derivation of data see explanatory notes in Appendix.

TABLE 8

INDUSTRIAL MANPOWER REQUIREMENTS AND ESTIMATED PER WORKER OUTPUT 1949-1952[7]

NOTE: Tables include comparative data of selected Latin-American Countries.

Country	Population in Millions	Year	Total Fixed capital inv. in millions of $	Total value of production in millions of $	Ratio of Inv. of Pred. Value	Number Employed	Value of Output per worker	Aver. Inv. worker	Increase or Decrease in no. of workers
Argentina	14.0	1939	1500[1]	1080	1 to .72	747,700	$1440	$2000	
Chile	5.0	1940	200	200	1 to 1	146,000	1420	1420	
Mexico	19.6	1940	640	640	1 to 1[2]	390,000	1640	1640	
Philippines	16.0	1938	260[3 6]	231.5[4 5]	1 to .88	234,000[11]	985	1090	
	20.0	1948	184[6]	162.0[8]	1 to .86	195,000[12]	830	940	— 39,000
	20.4	1949	229[9]	206.0[10]	1 to .90[10]	230,000[13]	900[13]	990	+ 35,000
	20.9	1950	269[9]	255.0	1 to .95	255,000	1000	1050	+ 25,000
	21.4	1951	316.7[9]	316.7	1 to 1	280,000	1125	1125	+ 25,000
	21.9	1952	339.4[9]	355.0	1 to 1.05	314,000	1225	1080	+ 34,000
						Net Total			119,000

industries, the figure of 1,500,000 workers for tertiary industries by 1952 is probably somewhat more realistic.

Thus the total increase in manpower requirements in primary, secondary and tertiary industries between 1939 and 1952 may be estimated at roughly 1 million persons. In the same period the aggregate increase in the potential labor force will be 2 million persons.

Vocational Training and Nobility

The foregoing discussion and analysis of the manpower requirements of the investment program assesses the extent to which additional workers will be required by the Philippine economy between now and 1952. It also reveals that new workers will be necessary in all branches of the economy. These workers, especially for secondary and tertiary industries, will require considerable training before they can make their contributions to the development program. It is the function of vocational training to bridge the gap between the quantitative abundance of manpower and its qualitative suitability. Table 9 presents the most detailed available data on the existing Philippine vocational training program. The data reveal an anticipated ten-fold increase in estimated enrollment between 1947-48 and 1948-49. Although, if achieved, this will constitute a most notable stride, most of the increased enrollment is in general secondary schools with vocational course offerings. Such specialized institutions as the "normal" schools for building construction show much less spectacular planned increases in enrollment.

An economically undeveloped country like the Philippines which seeks to diversify its economy as well as to industrialize, must rely very heavily on vocational training. The training should not assume the form of indiscriminate emulation of existing vocational training programs, but should be strictly based on formulated requirements and geared to domestic needs and possibilities. It should stem from a sound manpower program devised on the basis of specific projects to be developed over a period of several years, and an examination of the existing manpower resources. Through various types of tests, those elements in the population which show special aptitudes in acquiring industrial skills and submit readily to the discipline and other exacting requirements of modern industry, should be given the appropriate training in vocational schools or on the job in accordance with the most modern methods in existence. This will require special expenditures but if properly handled they will more than repay the country. A proper orientation on the part of the public education system can prove of great value to vocational training.

TABLE 9

NUMBER OF GRADUATES FROM PUBLIC SCHOOLS WITH VOCATIONAL TRAINING CURRICULA, 1945 TO 1948 AND ESTIMATED ENROLLMENT 1948-49

School	1948 No. of Schools	Qualification of Graduates	1945-46	1946-47	1947-48	Estimated Enrollment 1948-49	Percent Distribution Est. Enrollment	Remarks
Secondary								
General	160	4 yrs. Preparation for college, commercial courses, ceramics, chemistry, other vocation courses	11,328	15,784	22,929	190,354	87.2	
Agricultural	21	4 yrs. Different phases of farming	349	407	537	7,177	3.3	
Rural			317	478	600	3,946	1.8	
Trade	24	4 yrs. Auto engineering, metalwork, & electrical installations, 2 yrs. furniture making.	557	779	841	11,346	5.19	
Normal		Bldg. construction, drafting, dressmaking, food trades, etc.	70	155	99	327	.1	
Home Economics	4	Teachers	102	109	38	1,030	.5	No information on whether this is enrollment in a curriculum in the above schools or in a separate school.
Vocational						895	.4	
Technical Collegiate								
Normal (2 yr. general curriculum)	7	Teachers	178	595	784	2,528	1.2	
(3 yr. combine curriculum)				35				
Trade	3	Superintendents, teachers	33	42	225	409	.2	Excludes College of Agri. Univ. of the Phil.
Agricultural	4	Teachers				38	.01	
Commercial	1					305	.1	
GRAND TOTAL			12,934	18,384	26,053	218,355	100.0	
American Tractor School		Drivers & mechanics			200			
NDC Tractor Pools & Rice and Corn Projects		(Number to be trained)			300			
Private Institutions		(Number to be trained)			500			Training period — 6 mo.

SOURCE: Department of Education, Republic of the Philippines, 1948.

Not infrequently economically undeveloped countries find it difficult to carry out various development programs because of the failure to secure a ready response from the populace. Man is the hardest of all baggage to move and in a country where transportation and communications are poor, and where local ties have deep roots, it is no simple task to bring together manpower with the natural resources which await development. In the Philippines especially, the existence of so many widely separated islands, frequently dominated by varying customs and beliefs, presents, a formidable obstacle to unlimited labor migration. In programming manpower supplies consideration must therefore be given not only to over-all magnitudes but also to manpower balances in what might be regarded as self-contained labor markets. In connection with inducing labor mobility to shortage areas, consideration might be given to various types of incentive schemes, including free transportation, attractive housing facilities, etc.

Manpower Reserves

The volume of unemployment of 2 million persons reported in 1939 by the census constituted a great exaggeration of the extent of unutilized manpower since students attending school and unemployables were lumped together with those genuinely seeking employment but unable to locate it. When from the total reported as unemployed the first two categories are removed as not being true labor market participants, the actual number of unemployed becomes about 215,000 persons. On an over-all basis this meant that only 3 percent of the labor force was unemployed or that the Philippines enjoyed conditions of full employment as defined by Sir William Beveridge.

Unemployment

A further analysis of the unemployed figures contained in Table 10 below, reveals its incidence by major branches of the economy. It appears that the tertiary industries, with the exception of transportation and communication had no significant unemployment. On the other hand, the secondary industries, particularly manufacturing and mechanical pursuits, were experiencing some real unemployment amounting to in excess of 6 percent. The same situation held true in fishing, forestry and hunting. No serious unemployment was reported in agriculture, but of course, hidden unemployment or underemployment was not included. The volume of hidden unemployment in agriculture undoubtedly greatly surpassed in magnitude all the rest of the reported unemployment throughout the economy.

The prevalence of a manpower reservoir is of special significance to an economic development program. It usually implies that at least

TABLE 10

EMPLOYMENT AND UNEMPLOYMENT BY OCCUPATION 1939, THE PHILIPPINES

Occupation	Employment	Unemployment	% Unemployed
Agriculture	5,008,647	129,335	2.6
Forestry and hunting	26,820	1,745	6.5
Fishing	180,569	10,322	5.7
Mining and quarrying	47,019	2,123	4.5
Manufacturing and mechanical industries	601,335	36,755	6.1
Transportation and communication	203,596	13,885	6.8
Trade	270,766	8,760	3.2
Clerical	48,899	851	1.7
Professional Service	103,415	2,604	2.5
Public service	49,620	524	1.1
Domestic and personal service	332,321	8,342	2.5
	6,873,007	215,246	3.1
Agricultural	5,008,647	129,335	2.6
Non-agricultural	1,864,360	85,911	4.6

Composition of Unemployment Data in Census

Total Persons 10 years and over not employed	2,614,407
Persons unemployed but usually engaged in a gainful occupation	215,246
Persons classified as unemployed who are students, unemployables, dependents, etc.	2,399,161

SOURCE: Philippines Census 1939, Summary and General Report, Volume 2.

insofar as manpower resources are concerned, they will not be a contributory factor toward inflation which may be expected to accompany a heavy investment program for economic development. Of course, the nature of the manpower reserves must be taken into consideration. Are they equal in quality to the tasks set for them? Is it a manpower reserve trained in the required skills? Lastly, is the manpower available in the proximity of the areas where it is apt to be needed or what inducements will have to be offered to bring them there?

Conclusions

The population of the Philippines is expected to increase from 16 million persons in 1939 to roughly 21,900,000 in 1952. Since no major changes in sex and age composition are expected, the potential labor force may be assumed to increase proportionately. Thus, it may be expected to rise from 5,400,000 in 1939 to 7,400,000 in 1952. The combined increased manpower requirements under the investment program will not exceed 1 million workers. Thus there is not likely to be any absolute manpower shortages. The only manpower problems that face the investment program are those of appropriate vocational training and proper geographic distribution of manpower resources. It is to these problems that close attention must be given lest they become obstacles to the timely realization of the investment program.

The analysis of the Philippine manpower picture reveals that a number of problems will have to be resolved in order that manpower should not act as a limiting factor in the course of economic development. The major two problems of manpower are likely to appear in the form of a need for an adequate vocational training program and geographic reallocation of the available surplus manpower resources. Without the solution of these two basic problems it will not be possible to create a more favorable occupational structure than the prevailing one and to raise the per capita real income of the Philippine population. Furthermore, failure to cope with these problems may even hinder the implementation of the several projected development projections which rely heavily on building and construction labor. As economic development plans are launched, skilled labor in those occupations is apt to become progressively scarcer and is apt to become a real bottleneck.

The program of vocational training should be most realistic and geared to the needs of development purposes. It should assess the quantitative as well as the qualitative attributes of the labor market in the light of anticipated manpower requirements. In this connection the prevalence of "additional occupations" should be carefully examined in terms of the possibility of their expansion. The possibilities of attracting more agricultural manpower into building and construction industries should be carefully examined and assessed. Manpower programming must take into consideration the annual growth in the labor force and its availability for economic utilization.

The problem of geographic distribution of manpower deficits and surpluses is also of vital significance in a country where substantial natural barriers to mobility are augmented by strong family ties and other immobilizing forces of a sociological character. Detailed schemes with appropriate incentives will probably have to be devised in reallocating manpower from one geographic area to another. This subject needs very careful attention and study. In this connection it may also be worthwhile to analyze what groups have been found to be particularly amenable to industrial training and discipline, which ones are most likely to resist leaving agriculture as their major occupation and what the impact of these considerations is apt to be on various specific development projects.

APPENDIX TABLE I

Population of the Philippines by Age and Sex Estimated July 1

(In Thousands)

Age	1946			1949			1954			1959		
(Years)	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	1,621	1,582	3,203	1,720	1,673	3,393	1,933	1,867	3,800	2,158	2,098	4,256
5-9	1,448	1,337	2,785	1,460	1,427	2,887	1,555	1,536	3,091	1,747	1,714	3,461
10-14	1,149	1,064	2,213	1,245	1,190	2,435	1,428	1,396	2,824	1,521	1,502	3,023
15-19	975	1,017	1,992	1,075	985	2,060	1,220	1,166	2,386	1,399	1,368	2,767
20-24	869	913	1,782	940	960	1,900	1,044	956	2,000	1,185	1,132	2,317
25-29	791	810	1,601	820	865	1,685	903	924	1,827	1,003	921	1,924
30-34	598	546	1,144	670	690	1,360	775	829	1,604	853	885	1,738
35-39	492	499	991	550	510	1,060	629	658	1,287	728	791	1,519
40-44	396	367	763	430	425	855	513	483	996	586	624	1,210
45-49	251	245	496	255	280	690	397	400	797	473	455	928
50-54	251	245	496	255	280	535	319	316	635	362	372	734
55-59	212	207	419	235	220	455	227	255	482	285	288	573
60-64	203	170	373	190	180	370	203	195	398	196	226	422
65 and over	327	339	666	372	368	740	422	412	834	468	456	924
Total	9,651	9,416	19,067	10,312	10,113	20,425	11,568	11,393	22,961	12,964	12,832	15,796

SOURCE: 1946 from "Yearbook of Philippine Statistics, 1946", Bureau of Census and Statistics. Manila, Page 15, Table 11.

3203
2785
2213
8201

2

APPENDIX TABLE II

Percentage Distribution of Population[1] of The Philippines by Age and Sex

Age	1946			1949			1954			1959		
(Years)	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	16.8	16.8	16.8	16.7	16.5	16.7	16.7	16.4	16.5	16.7	16.3	16.5
5-9	15.0	14.2	14.6	14.1	14.1	14.1	13.5	13.5	13.5	13.5	13.3	13.5
10-14	11.9	11.3	11.6	12.1	11.8	11.9	12.3	12.3	12.3	11.8	11.7	11.7
15-19	10.1	10.8	10.4	10.4	9.7	10.1	10.6	10.2	10.4	10.8	10.7	10.7
20-24	9.0	9.7	9.3	9.1	9.5	9.3	9.0	8.4	8.7	9.1	8.8	9.0
25-29	8.2	8.6	8.4	8.0	8.6	8.2	7.8	8.1	8.0	7.7	7.2	7.5
30-34	6.2	5.8	6.0	6.5	6.8	6.7	6.7	7.3	7.0	6.6	6.9	6.7
35-39	5.1	5.3	5.2	5.3	5.0	5.2	5.4	5.8	5.6	5.6	6.2	5.9
40-44	4.1	3.9	4.0	4.2	4.2	4.2	4.4	4.2	4.3	4.5	4.9	4.7
45-49	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.5	3.6
50-54	2.6	2.6	2.6	2.5	2.8	2.6	2.8	2.8	2.8	2.8	2.9	2.8
55-59	2.2	2.2	2.2	2.3	2.2	2.2	2.0	2.2	2.1	2.2	2.2	2.2
60-64	2.1	1.8	2.0	1.8	1.8	1.8	1.8	1.7	1.7	1.5	1.8	1.6
65 and over	3.4	3.6	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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[1] Based on population estimates as of July 1.

APPENDIX TABLE III

Number and Percentage Distribution of Population[1] of the Philippines by Age and Sex

Age	1946			1949			1954			1959		
(Years)	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Number (In Thousands)											
0-14	4,218	3,983	8,201	4,425	4,290	8,715	4,916	4,799	9,715	5,426	5,314	10,740
15-64	5,106	5,094	10,200	5,515	5,455	10,970	6,230	6,182	12,412	7,070	7,062	14,132
65 and over	327	339	666	372	368	740	422	412	834	468	456	924
Total	9,651	9,416	19,067	10,312	10,113	20,425	11,568	11,393	22,961	12,964	12,832	25,796
	Percentage Distribution											
0-14	43.7	42.3	43.0	42.9	42.4	42.7	42.5	42.2	42.3	42.0	41.3	41.7
15-64	52.9	54.1	53.5	53.5	54.0	53.7	53.9	54.2	54.1	54.4	55.1	54.7
65 and over	3.4	3.6	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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[1] Based on population estimates as of July 1.

THE PHILIPPINES

Procedure in projecting population to July 1, 1949, 1954 and 1959

The 1946 Population of The Philippines, estimated as of July 1, by age and sex given in the "Yearbook of Philippine Statistics, 1946", Bureau of Census and Statistics, Manila, page 15, was projected to 1949. The Mexican experience of 1939-41 adjusted to 1947 was used in this projection.

A. Following are the steps in the calculation of the estimated age distribution on July 1, 1949.

1. Probabilities of surviving three years from the middle of each 5 years age group were derived from the adjusted Mexican experience for males and females separately.
2. These probabilities of survivorship were applied to the respective age group of the July 1, 1946 estimated distribution.
3. The resulting age distribution as of 1949 was grouped by ages 3-7, 8-12, etc.
4. The 0-2 estimated population for 1949 ("Bulletin of Philippine Statistics", December, 1945, Vol. I, No. 2, pp. 206-211) was added to the new distribution. This series was then cumulated and the cumulative series was rough charted.
5. The cumulative age distribution as of the end of each of the conventional 5 year age group (0-4, 5-9, etc.) was then read off the chart.
6. The cumulative figures were decumulated and the 0-4 estimated population given in the "Bulletin of Philippine Statistics" was substituted for the data read off the chart.

B. The estimated age distribution on July 1, 1954 was obtained as follows:

1. Probabilities of surviving five years from the middle of each age group were derived from the adjusted Mexican experience for males and females separately.
2. These probabilities of survivorship were applied to the respective age groups of the projected 1949 population.
3. The resulting age distribution was grouped in the conventional five year grouping with the omission of the 0-4 group.
4. The estimated 0-4 population given in the "Bulletin of Philippine Statistics" was used.

C. The same procedure given in B above was followed in projecting to 1959 except that the 0-4 age group was estimated as follows:

1. The estimated population "under one year" in 1954 was divided by the total female population aged 15-54 in 1954 to give a "crude specific birth rate".

2. This rate multiplied by the projected 1959 female population 15-54 years of age gave the estimated "under one year" population in 1959.

3. The "under one" population in 1954 and in 1959 were plotted on a chart and connected by a straight line. These data for the years between 1954 and 1959 were read off the chart.

4. These total figures in each years were distributed into male and female using 50.6 percent of the total as male.

5. Probabilities of surviving for one, two, etc. years from "under one year" were applied to these estimated population data of "under one year" in each year from 1954-1959 to obtain, when summed, the 0-4 age group in 1959.

APPENDIX TABLE IV

Number of Gainful workers engaged in Manufacturing and Mechanical Industries, Philippines — 1939

(In order of magnitude)

Industry or occupation	Number of Gainful Workers		
	Both Sexes	Male	Female
I. *Handicrafts*			
Embroidery and dressmaking	**113,810**	**2,630**	**111,180**
Native textile manufacture	**55,834**	**1,047**	**54,787**
Laborers (industry not stated)	**51,504**	**48,300**	**3,204**
Mat manufacture	**27,318**	**1,120**	**26,198**
Tailor shops & necktie manufacture	**23,723**	**15,729**	**7,994**
Hat manufacture	**23,296**	**2,848**	**20,448**
Shoe & slipper manufacture	**20,271**	**14,523**	**5,748**
Miscellaneous manufactures	**12,281**	**7,111**	**5,170**
Nipa manufacture	**11,058**	**5,311**	**5,747**
Cigar & cigarette manufacture	**11,027**	**5,272**	**5,755**
Bakeries	**10,374**	**9,509**	**865**
Garage & auto repair shops	**7,126**	**7,116**	**10**
Blacksmiths	**6,892**	**6,890**	**2**
Clay, brick, tile & pottery manufacture	**6,733**	**2,307**	**4,426**
Bamboo manufacture	**5,274**	**2,746**	**2,528**
Clock, watch, jewelry manufacture	**4,749**	**4,612**	**137**
Printing and publishing	**4,169**	**3,798**	**371**
Salt manufacture	**3,571**	**2,857**	**714**
Slaughterhouses	**3,532**	**3,475**	**57**
Furniture manufacture	**3,522**	**3,184**	**338**
Typewriter, radio, and other repairs	**2,905**	**2,895**	**10**
Shirt manufacture	**2,492**	**433**	**2,059**
Sawali manufacture	**2,014**	**1,113**	**901**
Candy & caramel manufacture	**1,498**	**677**	**821**
Apa, hopia, and ampaw manufacture	**1,365**	**384**	**981**
Tinsmiths	**1,251**	**1,240**	**11**

	Number of Gainful Workers		
Industry or occupation	Both Sexes	Male	Female
Bale, spear, & axe manufacture	1,139	1,117	22
Fish curing, salting, and dreying	1,123	867	256
Leather products manufacture	1,013	918	95
Charcoal manufacture	840	788	52
Carpentry shops	671	654	17
Soap manufacture	597	564	33
Woodworking and box manufacture	473	419	54
Dairy products manufacture	448	372	76
Broom & brush manufacture	353	229	124
Macaroni & vermicelli manufacture	346	289	57
Musical instrument manufacture	315	309	6
Carriage, calesa & carromata manufacture	252	249	3
Toyo & taho manufacture	220	196	24
Paper processors	199	153	46
Lithography & engraving	196	187	9
Candle manufacture	179	137	42
Agriculture implements manufacture	95	95	—
Paint & varnish manufacture	84	68	16
Toy manufacture	48	42	6
Total Handicrafts	426,180	164,780	261,400
II. *"Industry Proper"*			
Sugar centrals & muscovado mills	22,044	21,762	282
Saw and planing mills	21,785	21,747	38
Rice and corn mills	9,249	7,971	1,278
Ship & boat manufacture	6,226	6,197	29
Desiccated coconut manufacture	4,311	3,059	1,252
Cordage manufacture	2,929	1,419	1,510
Coconut oil manufacture	1,933	1,844	89

Industry or occupation	Number of Gainful Workers		
	Both Sexes	Male	Female
Lime and cement manufacture	1,687	1,599	88
Hemp mills, abaca stripping & baling estbs.	1,442	1,225	217
Foundries & welding shops	1,441	1,438	3
Aerated & distilled water manufacture	1,063	965	98
Ice manufacture	634	620	14
Match manufacture	546	367	179
Breweries	523	510	13
Button & other shell products manufacture	506	398	108
Sack manufacture	494	126	368
Liquor & beverage manufacture	311	269	42
Textile manufacture	289	106	183
Fish & sea products canning	251	195	56
Pineapple canning	112	77	35
Fruit & vegetable canning	25	14	11
Fertilizer manufacture	15	15	—
Total "Industry Proper"	77,816	71,923	5,893

Summary:

	Both Sexes	Male	Female
Number of Workers in:			
I. Handicrafts	426,180	164,780	261,400
II. "Industry Proper"	77,816	71,923	5,893
Total	503,996	236,703	267,293

Percentages:

	Both Sexes	Male	Female
I. Handicrafts	84.6	69.6	97.8
II. "Industry Proper"	15.4	30.4	2.2
	100.0	100.0	100.0

SOURCE: Philippines Census 1939, Summary and General Report, Volume 2.

APPENDIX TABLE V

PROJECTIONS OF AGRICULTURAL LABOR FORCE, THE PHILIPPINES, 1947-1952

Type of Enterprise	Employment 1939, actual (in 1,000)	Per Cent Distribution	1947	Employment Estimates[1] 1949 (in 1,000)	1952
Rice	**1,728**	**47.1**	**2,111**	**2,217**	**2,382**
Corn	**666**	**18.2**	**816**	**857**	**920**
Coconut	**297**	**8.1**	**363**	**381**	**410**
Sugar	**217**	**5.9**	**264**	**278**	**298**
Abaca	**159**	**4.3**	**193**	**202**	**217**
Tobacco	**60**	**1.6**	**72**	**75**	**81**
Livestock	**21**	**.6**	**27**	**28**	**30**
Fishing	**181**	**4.9**	**220**	**231**	**248**
Forestry	**27**	**.7**	**31**	**33**	**35**
Other	**313**	**8.6**	**386**	**405**	**436**
Total	**3,669**	**100.0**	**4,483**	**4,707**	**5,057**

	1939	1947	1949	1952
Total Population	**16,000.**	**19,511**	**20,425**	**21,880**
Total Labor Force[2]	**5,321**	**6,497**	**6822**	**7,329**
Per Cent Labor Force is of Total Population	**33.3%**	**33.3%**	**33.4%**	**33.4%**
Agricultural Labor Force	**3,669**	**4,483**	**4,707**	**5,057**
Per Cent Agricultural is of Total Labor Force	**69.0%**	**69.0%**	**69.0%**	**69.%**

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[1] Projections of agricultural labor force are distributed by 1939 pattern of employment.

[2] Adjusted to exclude housewives.

APPENDIX TABLE VI

PROJECTIONS OF MANPOWER* REQUIREMENTS AND MANPOWER AVAILABILITY FOR AGRICULTURE, THE PHILIPPINES
1947 - 1952

(in thousands)

	1947 Estimate		1949 Estimate		1952 Estimate	
Type of Enterprise	A[1] Requirement	B Supply	A Requirement	B Supply	A Requirement	B Supply
Rice	1,566	2,111	1,574	2,217	1,600	2,382
Corn	593	816	601	857	613	920
Coconut	297	363	297	381	297	410
Sugar	20	264	174	278	243	298
Abaca	86	193	100	202	126	217
Tobacco	35	72	35	75	60	81
Livestock	8	27	11	28	18	30
Fishing	239	220	456	231	645	248
Forestry	26	31	29	33	50	35
Other	312	386	334	405	381	436
Total	3,182	4,483	3,611	4,707	4,033	5,057
Annual Manpower Surplus in Agriculture (B-A)			1,301[1]	1,096	1,024	

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*Excludes most female workers.

[1] Low requirements in 1947 due to war disruption.

Estimates A are related to the production goals made by the Philippines Mission. The manpower estimated fulfill these production goals assumes 1939 standards of efficiency, e.g. the ratio of output to acreage and of acreage to manpower are the same as in 1939.

Estimates B are estimates of probable manpower available based on projections of population by sex and age. The available working age population thus calculated was distributed occupationally according to 1939 patterns.

CONSTRUCTION INDUSTRY

Explanatory Notes

1. The 1940 prewar per capita average value is based on the construction investment for the years 1936-40 in Manila. On this figure a total national average of $5.00 per capita is assumed.
   Source: Bureau of Census and Statistics.

2. The postwar average of $18.00 per capita value for construction is derived from investment during 1947 in Manila amounting to $36 millions. A national average of approximately $10.00 per capita is assumed or twice the prewar rate due to inflated costs.
3. The volume of construction per worker for 1940 is derived from IBRD estimates of total labor force in the construction industry divided into the estimated value of construction. For the years 1947 to 1952 the prewar rate has been doubled less 10% allowance for lowered output due to material shortages and inefficient equipment. This calculation assumes essentially the same rate of output by increasing the labor force to offset the above situation.

4. For the years 1949 to 1952 the estimated values of construction are based on the capital requirements of the short term program as presented to IBRD. A current and average cost index of twice prewar (1938) values has been used.

5. The item of $21.5 millions or 12% of the prewar estimate value of construction is used to establish the normal rate for residential and commercial construction including hotels, theatres and such non-commercial construction such as churches, etc. The estimate does not include public works, schools, hospitals, etc. The prewar rate of construction in Manila averaged 4 million dollars for the years 1936-1940 and it has been estimated that 8 million dollars would represent a fair normal average of construction investment in Manila for the next 5 years. The 1947 trends indicate an abnormal cost of 36 million dollars worth of construction activity in Manila. The reasonable assumption is taken that this rate will not be maintained, but will generally settle at approximately 2½ times the norm calculated for Manila. Allowances are made for increased material costs plus higher labor values.

6. The estimated 20% of the total agricultural program represents the value of permanent structures and installations such as buildings, barns, silos. roads, sewage and irrigation systems, etc.

7. The estimated values for the industrial program represents the total fixed capital investment into industries, power, mining, public works, housing and fixed transportation installations.

8. The value shown for war damage construction is arrived at as follows:

Total War Damage Allocation of Funds from the U.S.	$620 Million
Less Payments Not Directly Invested into Construction	260 Million
Balance Estimated For Construction or Rehabilitation Purposes	$360 Million
Less Payments and RFC Loans Made During 1947-48	60
Balance	$300 Million or

an average of $60 Millions Each Year for the Next Five Years.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF FINANCE
Washington, D. C.

Office of the Secretary

October 21, 1948

Dear Dr. Ross:

I have gone over the copy of the paper entitled "Manpower and the Philippine Development Program" which you gave to me on October 19. I have also shown it to Secretary Cuaderno. We appreciate your having given this problem the benefit of your experience, your having furnished the necessary conceptual framework and the care with which you fitted the rather limited available data into it. I am taking advantage of your offer to me to feel free to comment on it and you will find attached the observations I have made. They are based partly on the data given in the paper and partly on personal factual knowledge of Secretary Cuaderno.

The purpose of the paper is obviously to arrive at an assessment of the order of magnitude of manpower requirements and supplies and to suggest broadly the nature of the problems that might beset the course of the development program in this field. The comments I have made would contribute, I hope, to refining this preliminary assessment and to drawing the realistic dimensions of the problems suggested.

Mr. Tavarez and I enjoyed the many pleasant business meetings we have had while working on this problem and I am taking the opportunity to thank you for the interest you have taken in it and the sympathy and consideration that you have shown us.

Sincerely yours,

s/ LEONIDES S. VIRATA
Member of Staff

Dr. Murray Ross
International Bank for Reconstruction
and Development
Washington, D. C.

COMMENTS ON THE PAPER
"MANPOWER AND THE PHILIPPINE DEVELOPMENT PROGRAMS

A. Manpower in Secondary Industries—2nd paragraph, page 19.

I — Building Construction

(a) How was the total of 24,000 new trained construction workers calculated? Table 7, page 20 indicates the absolute increase from 1948 to 1951 is 11,000 (From 125,000 to 136,000).

(b) Since construction activity precedes operation it is correct to assume that the most urgent immediate demand would be for workers in the building trades. The problem of supplying this demand might appear less formidable than the paper seems to suggest if one considers the following:

1. Table 7, page 20 indicates that the increase of 11,000 will not occur till 1951. In other words the country is given two years during which to train new workers.

Inasmuch as a course in building trades is currently offered in "trade schools" on a normal basis of two years it should not be difficult to do either or both of the following:

a. Introduce a similar course, if this is not done already (since no information is available that it is not one of the vocational courses offered by the "general secondary schools") in "general secondary schools" where enrollment is greatest.

b. Accelerate the course in both the "trade" and "general secondary schools." The table on vocational training (page 26) shows that trade schools are currently turning out around 800 graduates from the secondary department and around 200 (teachers) from the collegiate department in all fields. Expected enrollment in 1948-49 is around 11.5 thousand.

Furthermore, on-the-job training can be given during these two years.

2. The tables on additional occupations (pages 16, 17, and 18) show that building construction received 75,372 workers from primary industries; 2,418 workers from secondary; and 2,238 workers from tertiary industries in 1939, during off seasons in these industries. Therefore, the number of workers with the requisite aptitude (possibly requiring far less training than a fresh recruit especially if the changes to be adopted in technology is not very substantial) that can be immediately drawn off especially from the primary industries into building and construction is very large—more than sufficient to meet the increased requirements of the program by 1951.

3. The experience of the U. S. Army in 1945 not only with respect to the number of qualified workers available but also with respect to the movement of workers is notable. This experience appears to be common to U. S. Army establishments not only in Manila but all over the Philippines. The investment program of the Army may have been smaller in magnitude but its scheduling was such that the time available for training was much shorter and the facilities left by the war precluded anything but on-the-job training. It should also be noted that because of the urgency of the jobs to be done the Army had to introduce many types of tools and equipment new to the average Filipino worker. Workers flocked to the various employment centers and it appears from available information that the Army never suffered from any serious shortage of qualified workers. It was also revealed that the problem of relocating workers from one part of the country to another was only difficult with regard to those in the age brackets of 35 and over and then only when they are tied up to a piece of land either as owner or tenant. The prospect of being able to visit home every once in a while made leaving easier for those who left, and afterwards realization of higher income opportunities in their new environment encouraged continued stay. Because of the current low level of per capita cash income the opportunity of earning higher money wages realized upon immediately as soon as work has been performed thus eliminating the necessity of postponing the satisfaction of many essential

needs while awaiting harvests (which is the common plight in agriculture) have acted as a powerful incentive to induce movement to areas where such employment opportunities are available.

II — Operation

How was the total of 120,000 new industrial workers arrived at? Table 8, page 21, shows that from 1938 to 1948 there was a reduction in industrial employment of 39,000. The net change by 1952 appears to be 80,000. It is not known of course how many of the 39,000 laid off as of 1948 are re-employable.

The fact that operation follows construction justifies the assumption that more time is available here for training of workers. It is rightly pointed out in the paper that their training periods should be shorter. Furthermore, surprising as it may seem in a predominantly agricultural country, on-the-spot experience of the U. S. armed services and the National Development Company and private entrepreneurs with respect to some new projects that have been launched since 1947 and are now in operation, indicate that aptitude for, and interest in, mechanical work, in machine operation, tending, and maintenance is high among Filipino workers.

Another point may be worth noting. The table on page 20 indicates that 30,000 workers may be laid off construction work by 1952. It would not be unreasonable to assume that many of these men will have preference over others, things being equal, in the filling of jobs that may be available after construction is finished. Having participated in the construction of the physical plant and in the installation of equipment they would be more settled in the environment and more familiar with it. They shall have solved the problems incident to relocation, if they are workers that moved in from other parts. What was said in No. "I" above about mobility also applies here.

III — Mining — 1st paragraph, page 24

There is every reason to believe, as stated in the paper, that the manpower requirements in mining can be easily met. There are only a few of the pre-war mining companies that are operating now and the greater number of pre-war mining technicians and workers are still unabsorbed up to the present time.

B. Manpower Reserves, page 27

The first paragraph of this section being the paragraph that treats of the overall magnitude of unemployment might leave the general reader an incomplete impression which does not get filled in until he reaches the top of page 29. This could be avoided by adding a reference to hidden unemployment right after "Beveridge." The magnitude of hidden and/or underemployment looms large in the Philippine manpower picture and should be referred to in a general appraisal such as the one made by this paragraph.

C. Vocational Training and Mobility, page 24

There is a minor error in the typing of the vocational training table 9, page 26. "Auto Engineering... trades, etc." all refer to "trade" schools and not "normal" schools. Consequently the reference to "normal" schools towards the middle of page 25 should be changed to "trade" schools. The Corresponding enrollment picture for trade schools according to the table is better than for "normal" schools.

The need for vocational training of a deliberate sort tied in with project requirements has been realized an on-the-job training has been adopted by the National Development Company and private enterprises in some of the projects that have been launched during the last three years. Furthermore, the orientation of the public school system to the objective of providing for generally anticipated demand in vocational lines has already begun as early as 1941 but the war interfered and the change did not have significant effect till 1945-46, as soon as schools were reopened.

APPENDIX 26

SURVEY OF MANPOWER SUPPLY AND REQUIREMENTS 1948-1952

This draft report was written by Dr. Murray Ross of the Bank's staff on the basis of data assembled and processed by him, Mr. Tavarez and Mr. Virata. Informal discussions on the ground to be covered, the data needed and later on the implications of the figures assembled took place from time to time. After writing this draft Dr. Ross furnished a copy to Mr. Virata for his comments. The latter's observations are attached to the report.

A PROGRAM OF VOCATIONAL EDUCATION

I. VOCATIONAL EDUCATION: SUMMARY AND PROPOSALS

Vocational education below the collegiate level covers four major areas, namely, agricultural education, trade and industrial education, business and distributive education, and homemaking education. These different training programs in vocational education are carried out in the fifty-five (55) vocational schools under public support. These schools are distributed as follows: agricultural schools, 26; trade technical schools, 28; and business schools, 10. These schools have an enrollment of 28,068 students in the school year 1949-1950, which is 13.78 percent of the total secondary-school enrollment.[1] The enrollment in the vocational schools under public support is distributed as follows: agricultural education, 10,586 students, or 37.6 per cent; trade and industrial, 17,123 students, or 61.0 per cent; and business education, 359 students, or 1.4 per cent.

For the operation and maintenance of the vocational schools, the amount of ₱2,159,068.00 was appropriated during the fiscal year 1949-1950. This amount is around 1.6 per cent of the total appropriation of ₱139,592,208.00[2] for the public schools. In other words, *for every peso appropriated for the public schools, a little over one and one-half centavos (₱0.016) are appropriated for the support of the vocational schools.*

Computed on a per-student basis, about ₱223.12 goes to the support of business and distributive education (Philippine School of Commerce), ₱153.26 goes to agricultural education, and only ₱26.66 to trade and industrial education. Thus for every peso appropriated by the National Government for vocational education, about 75 centavos is spent for agricultural education; 21 centavos for trade and industrial education; and four centavos (₱0.04) for business and distributive education.[3]

With the present low purchasing power of the peso, the average per-student national vocational aid and appropriation, especially for trade and industrial education, is indeed very low. Because of this acute financial difficulty, some of the vocational schools have to charge tuition fees as high as ₱75.00. Such a policy is at variance, and no doubt, runs counter with the intents and purposes of vocational training as provided for in the Constitution and the original provisions of the Vocational Education Act of 1927.

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[1] Total enrollment was placed at 203,569 students in the public schools. Data furnished by the Research and Measurement Division of the Bureau of Public Schools.

[2] Figure furnished by the School Finance Division of the Bureau of Public Schools.

[3] There is only one school of commerce compared to 26 agricultural schools and 28 trade schools.

Under the present financial state, the vocational schools, particularly the trade schools, have hardly acquired 10 per cent of their pre-war equipment. A few of the trade schools, however, have acquired some equipment equal in number to those of their pre-war set-up from the reparations equipment from Japan, but most of these pieces of machinery are not in good running condition and are unfit for instructional purposes. To put these machines in good running condition, it would entail a big outlay which may be wisely invested in modern equipment.

The finances and instructional facilities, such as equipment, hand tools, and other teaching aids and devices available in the vocational schools are hardly enough to meet the essential needs of even the 28,068 students presently enrolled in these schools. Of this number, approximately 15 to 20 per cent may be graduated every year. To enable the vocational schools to supply the manpower needs[4] of the manufacturing industry alone, estimated at aproximately 1,500,000, it would take up no less than 300 years(inasmuch as the vocation schools could turn out only approximately 4,500 trained workers every year. Unless the present instructional facilities are improved, the vocational schools cannot be expected to turn out graduates that are capable of meeting occupational standards.

With the expanded facilities recommended herein, it is expected that about 60,000 students could be given training each year, and the vocational schools alone could very well graduate no less than 10,000 trained workers every year.

To carry out the program of vocational education embodied in this report, the following proposals and recommendations are hereby presented:

1. A national advisory board on vocational education to advise the Secretary of Education on policies germane to the selection, training, placement, and progress of workers needed in agriculture, trades and industries, and business should be created. The board shall be composed of one representative each from the Department of Agriculture and Natural Resources, Department of Labor, and Department of Commerce and Industry to be recommended by the Department Secretary concerned,

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[4] Industrial manpower needs estimated by the *Beyster Commission* in its report, p. 62.

and three private citizens eminent in industry, agriculture, and business to be appointed by the President. (For the proposed *Executive Order* to carry this out, see APPENDIX "D".)

2. The Vocational Education Act of 1927 should be amended to convert the present Division of Vocational Education in the Bureau of Public Schools into an *Office of Vocational Education* to be placed directly under the Department of Education. An intial outlay of ₱147,420.00 will be needed to effect this proposal in addition to ₱62,580.00 of the salaries and wages of personnel who will be transferred to this new office. With this proposal, it is also recommended that the administration and supervision of the vocational schools, public and private, be transferred to this new office. (Please see APPENDIX "E" for the organization of the proposed *Office of Vocational Education.*)

3. The proposed five-year expansion program for vocational education will require an average yearly financial outlay of ₱10,094,011.12, including the requirements of the training programs in vocational education as demanded by accepted standards. The estimated cost of the five-year program would involve an aggregate cost of approximately ₱170.00 per student per year. This has been estimated on the basis of an expected yearly enrollment of 60,000 students.

4. The training program in the different areas of vocational education should be geared to the economic development program so that the trained workers can take part in it actively.

5. The training programs should be developed and organized in accordance with the prevailing needs and occupational standards so as to make the training functional. This would require greater autonomy and flexibility on the part of the local school administrators in operating the training programs. In this connection, it is recommended that auditing and accounting rules and regulations, which become the bottleneck in the progress of the vocational training programs, should be reduced to the minimum.

6. To step up the training of manpower needs for the envisaged economic development program, vertically and horizontally, more intensive short-unit courses should be organized and offered in the vocational schools both for in and out-of-school youth and adults on a day-and-evening-class basis to meet certain entrance requirements in areas where the projected industrial plants are to be established. These short-unit courses should be carried on the basis of cooperative training program, that is,

part of the training will be done in the school and part in the industrial plant.

7. The success of the training program in vocational education is conditioned by the occupational competency and professional background of the vocational teachers. In this connection and in order to raise the standard of instruction in the present vocational schools, it is strongly recommended that the training of needed teachers and the up-grading of the non-professionally-trained teachers now in the service be given immediate attention. For this purpose, the amount of ₱500,000.00, authorized under Republic Act No. 415 should be released immediately.

8. To implement and to carry out fully the intents and purposes of Republic Act No. 415, regarding the training of trade and industrial teachers, the proposed enabling legislation for the Philippine School of Arts and Trades be presented as one of the Administration *must* bills when the Congress convenes in its next regular session. (See Appendix "C".).

9. The advanced training for teachers and technicians and obtaining technical assistance from foreign countries should be made part of the program for vocational education. The following trainees or fellows should be sent abroad each year for the next five years in the fields of study indicated:—(a) five for advanced teacher-training, (b) six for the technical phases of agricultural education, (c) fifteen for trade-technical education, (d) two for business and distributive education, and (e) two for homemaking and vocational trades for girls, or a total of thirty trainees. It is estimated that the Philippine Government will need to set aside ₱60,000.00 annually to meet the expenses of these trainees; dollar expenditures are estimated at $105,000.00 necessary to cover the difference of the expenses of the trainees while in training abroad.

As to technical assistance from foreign countries, at least four (4) experts should be invited to assist in the organization and administration of the various teacher-training programs for at least the intial year of the five-year period. For these experts, it is estimated that the Philippine Government will need to set aside ₱38,120.00 to cover per diems, travelling expenses, and other allowances while in tour of duty in the Philippines.

In view of the fact that the success of the economic development of the Philippines depends to a large degree upon the effectiveness and extent of the vocational education program, it is strongly urged that recommendation No. 3 above be given immediate consideration.

II. GENERAL EDUCATION: SUMMARY AND PROPOSALS

For the carrying out of a scheme of general secondary education fully appreciative of the problems of economic development, the following proposals are hereby presented:

1. In order to provide adequate secondary education for all types of capacities and meet the needs of all youth of high school age, there should be developed gradually out of the present general high schools, secondary schools of the type of a comprehensive high school.[5] This type of secondary school would be more responsive in meeting the needs of the youth preparing to enter college and those who cannot continue for lack of means or otherwise but may desire to enter the occupations.

2. The type of high school recommended herein shall continue to be a tuition-fee school. In order, however, that the public secondary schools will not lose their identity as such, part of their operating expenses should be borne by the local government, particularly those which relate to the operation and maintenance of the practical arts courses. The local government aid to the high school should be determined on a per-student basis. That is, ₱40.00 per student in the first two years (junior high level) and ₱50.00 per student in the last two years (senior high level) for those preparing to enter the occupations should be made available to the local high school authorities. Students preparing for college should not be entitled to any government financial aid. All financial aid given to secondary education should be spent exclusively for the purchase of equipment and supplies needed for the practical arts and vocational courses. On the basis of the total enrollment of 171,295 in the general high schools in 1948-1949, the local governments would spend approximately ₱5,781,105.00, granting that 25 per cent of the total number of students are definitely going to college. This amount includes aid for girls taking homemaking.

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[5] This type of secondary school is four years in length. The first two years (junior high level) must be devoted to citizenship training or the basic core subjects and intensive practical arts courses for the *development of the right work attitude and habits and understandings.* This must be the common curriculum which should be required of all youth entering high school regardless of social and economic status, aptitudes and stations in life. This requirement (as provided for in the Constitution) must be enforced in both the public and private secondary schools. The last two years (senior high level), with the aid of an adequate guidance program, may be devoted either for the preparation for entrance in college or for successful entrance into the occupations. In places where there are special vocational schools, the preparation for entrance into an occupation must be done in these schools. However, in places where such facilities are not available, efforts must be made to provide such training for entrance into the occupations.

This proposal would provide the students the desired work experiences enunciated for the general high schools as these schools would be provided with adequate tools, equipment, and sufficient workshop space for all the practical arts courses offered.

3. In view of the difficult socio-economic conditions now obtaining in this country, in-and-out-of-school youth and adults who are in straits may be the cause of future social problems of serious proportions. For this matter, there is an immediate need of creating a National Youth Administration Office, to be placed directly under the Office of the President, which should look into the problems and welfare of youth with a view to recommending and adopting ways and means as well as measures calculated to improve the youth socially and economically through training. A certain portion of the President's social amelioration fund may be spent for this purpose.

4. The shortage of professionally-trained practical arts teachers is one of the most serious problems of the general secondary education. To solve this problem, the national vocational schools authorized to train such needed teachers must be provided with adequate funds to carry out the provisions of Republic Act No. 415.[*] This act was approved by His Excellency, the President, during the early part of 1949, but it has never been in operation since the Secretary of Finance has not as yet certified to the availability of funds as provided for in the said Act.

5. The administrators of general education should make a vigorous campaign to change the attitude of the youth as well as the adults toward work and economic consciousness. The role of productive workers in nation-building should be recognized and dignified. The press can likewise help along this line.

III. GUIDANCE: SUMMARY AND PROPOSALS

In view of the complexity of our changing socio-economic society, guidance becomes a necessary service in our total educational program. It should be integrated in and, if possible, precede any educational training program, especially in the field of vocational education.

The primary purpose of guidance is to help an individual make a wise choice of his life career consistent with his capacities, interests, and aptitudes; training opportunities; placement possibilities; and the needs of present-day industrial society. Unless there is an effective guidance program in each of our schools, there will always be a waste of human effort in training both on the part of the teachers and the students.

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[*] "An Act appropriating the sum of five hundred thousand pesos for the operation and maintenance of the teacher training departments of the existing national schools of arts and trades and the creation of teacher training departments in the Central Luzon Agricultural School, Baybay National Agricultural School, Bukidnon National Agricultural School and the Philippine School of Commerce, for the training of teachers of industrial arts, trades, agriculture, and business, respectively, for both the elementary and secondary schools."

In view of the above and so as to carry out the objectives of guidance, the following proposals are hereby made:

1. The guidance and counselling program of schools should be staffed with highly competent personnel. For this purpose, it shall be necessary to revive and strengthen the Section of Guidance and Placement in the Vocational Education Division.

2. All teacher-training curricula and courses, public and private, should make provisions for the inclusion of professional courses in guidance and counselling and vocational education to give teacher-trainees proper understanding and orientation in guidance and vocational education and to develop in them better work attitudes and habits. In this connection, it is recommended that 12 standard college units be the minimum requirements for these professional courses for students taking any of the teacher-training curricula.

3. The guidance and counselling program of the general secondary and vocational schools already established and those to be established must be strengthened under the leadership of local school administrators as a starting point and with the cooperation and understanding of the entire school staff on the program of guidance.

4. To implement the guidance services now being rendered in the vocational schools, a vocational counselor should be provided for each of the eight (8) national vocational schools who will act as head of the committee of teachers on guidance, and four (4) regional vocational counselors for the other vocational schools. With a salary item of ₱2,400.00 per annum for each counselor, the sum of ₱28,800.00 will be needed for this purpose. The general secondary schools may be urged to have also a vocational counselor in each school and provide funds therefor in their respective budgets.

A PROGRAM OF VOCATIONAL EDUCATION

I. INTRODUCTION

On January 27, 1947, the late President Manuel A. Roxas gave in broad terms an outline of industrialization program in a message[1] he delivered during the second session of the First Congress of the Philippines. He said in part:

> "The consistent thread running through the entire program I have outlined for the immediate future of our country is industrialization. This plan integrates with our power development projects, our vocational training program, our establishment of credit facilities, our promotion of geological researches and surveys, our invitation of American capital to invest here and the proposed constitutional provision for special rights for American citizens. We will insure the fullest participation by Filipinos in this program."

Evidently, President Roxas believed that the success of our industrialization program has to depend much upon our program of vocational training.

Much have been written and said about our economic development program in various economic reports and economic surveys submitted to the government, but nothing definite has so far been pointed out with regards to the role that education must play in this gigantic program. The most pertinent of them all was an article written by Dr. A. M. Dalisay[2] published in a local scientific magazine in which he said in part:

> "In order to meet the challenge of new projects or enterprises and the demands of industrialization, our educational system will require a re-examination, and re-appraisal. If our industries are to be managed and operated scientifically and economically, there must be available all the time a corps of competent managers and technicians. At the same time our people will need a general understanding of the socio-economic adjustments required by the change from a purely agrarian to a semi-industrial

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[1] President Manuel A. Roxas' Message to Congress. Manila Daily Bulletin, January 28, 1947.

[2] Dalisay, Amando M. "The Program of Economic Development" *Chemical Engineering Journal.* I: 2, page 53, March, 1949.

state. These, our schools alone can provide. Thus then education for adjustment and readjustment in our educational programs become apparent everyday. A broad educational policy attuned to the new demands will have to be evolved."

From the foregoing statement, it may be gleaned that the implementation of the economic development program of the government calls not only for the efficient training of an adequate supply of managers, technical, skilled or semi-skilled personnel, but also for effecting changes in our educational scheme. These changes should be directed toward our total economic program with a view to improving our outlook consistent with our political and economic status as an independent nation. The changes to be made may break long-established mores and traditions of the people or traditional patterns in education; nevertheless these have to be done if we must survive among the families of civilized and independent nations of the world.

Under the present state of affairs, our education must have to be geared to the economic development program if it is to be useful at all to the people in their efforts to free themselves from want and economic serfdom. Evidently, it is primordial that the youth as well as the adults be imbued with the concept of *education for economic consciousness or education for life adjustment in a new socio-economic order.*

From the economic viewpoint, education should increase both the productive and consuming capacity of the people. The per capita income, ability to produce material goods, business stability, and the like reflect, in a large measure, the economic well-being of the people. All these are in direct proportion to their educational level.

Our per capita income of ₱40.49 [1] is indeed very low compared with the income levels of other civilized peoples of the world in spite of the fact that the Philippines is rich in natural resources. This may be attributed to the general low level of functional education and technical training directed toward productive ends. Regardless of the abundance of natural resources, the level of education of a people, and the extent to which they have developed and applied skills and technical knowledge reflect their economic life. In other words, if the level of education in general and technical training in particular is high, the income level is correspondingly high no matter how meager are the natural resources of the country. Conversely, even if the natural resources are abundant but the level of general education and technical training is low, the income level of the people will remain low. This observation was made in a study by Clark [4] in 1945 and Prosser and Quigley [5] in 1949.

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[1] *Yearbook of Philippine Statistics*, 1946, and *World Almanac*, 1945.

The growth and expansion of the agricultural, industrial, and commercial enterprises and the improvement of the home and family life can be achieved simultaneously by gearing education to economic development. The approach to the problem under consideration would be to ascertain and analyze the educational status and economic conditions of urban and rural communities with a view to utilizing such information as means for social and economic advancement. The kind and amount of education provided for the masses should apply directly to the socio-economic needs of the people and the community. With this end in view, education and the productive efforts of the people can be geared to the total agricultural-industrialization program now being implemented in the Philippines.

The cost of adequate education, particularly that in the vocational-technical field, is an expensive but a necessary investment which should not be overlooked in any economic development scheme, because the success of such a plan is largely dependent upon the technical know-how and know-what of the people. It may be stated, however, that since our vocational education program is directed to the improvement of the national economic life and the standard of living of the masses, such financial investment for this program of education deserves the support of both the government and the people.

General education, on the one hand, should provide the youth with a broad basic education to prepare them for a richer and fuller living and thus enable them to participate in occupations of socio-economic value. The emphasis, therefore, must be more on education for *life adjustment* and readjustment.

Vocational education, on the other hand, must assume the responsibility not only of training youth and adults for successful entrance into the occupations, but also of meeting the manpower needs of the national agricultural-industrialization program. This program of training must be so planned that it would be responsive to the needs of industry.

Our problem of political freedom has already been achieved. The role of education in sustaining this political democracy is by a sound economic program which may be attained by consumer literacy and vocational efficiency. Consumer literacy is the responsibility of general education; vocational competency, of vocational education.

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[4] Clark, Harold T. "Education Steps Up Living Standards". *Chamber of Commerce of the United States*, 1945.

[5] Prosser, C. A. & Quigley, T. H. *Vocational Education in a Democracy*, pp. 60-64, 1949.

The above considerations led to the adoption of the following general guiding principles and assumptions:

General Guiding Principles and Assumptions

1. Agricultural and industrial development is envisaged in this country; education should be geared to that program.

2. The Philippines has, by nature, rich natural resources and raw materials; if properly developed they would provide the vital needs of the people and, incidentally, enhance the economic prosperity of the country.

3. The potential manpower of the country can be trained to meet the needs of the envisioned economic program. A great portion of these human resources is idle for lack of training.

4. In order to raise the standard of living of the people, their earning power should be increasd.

5. Education should function not only to strengthen political democracy, the maturity of which has already been achieved and recognized, but also to develop, maintain and enrich economic democracy.

6. The majority of the talented youth should be equipped by schools and through adequate guidance should go back to their respective communities and serve as leaders in raising the general level of living.

7. Education, in all its aspects, should reflect the socio-economic growth of the country. A broad knowledge and understanding should be applied to the solution of problems relating to socio-economic ventures upon which the welfare and prosperity of the people depend.

8. The people should be prepared, through education, to participate in occupations which are productive of economic and social value.

9. In order that the people would be able to participate in productive occupations they should learn, acquire, and develop by training the ability to produce.

10. Education can be efficient and effective only in proportion as the schools are staffed with adequately trained teachers, provided with facilities and funds for their operation and maintenance, and freed from the fetters of normal routine red tape.

11. Educational and vocational training programs, in order to be beneficial to all, should be developed out of the combined thinking and planning of lay citizens, parents, school patrons, and educators as well as industrial, commercial, and agricultural leaders of the country.

II. VOCATIONAL EDUCATION

Vocational-technical training is concerned mainly with the training of *productive workers* of various categories and qualifications in the fields of agriculture, trades and industries (including handicrafts), and commerce.

On the basis of the above-mentioned primary aim of vocational education and in accordance with the provisons of law, the vocational schools will perform this function. In order to effect a more effective program of vocational education capable of meeting the needs of the people it serves and of industry, the following basic principles have been adopted:

Basic Principles for a Program of Vocational Education

1. Vocational education as a part of the total education program, in all its phases, should be in keeping with the current needs of the people and consistent with the changing socio-economic demands and conditions. It must be progressive in its contents, methods, facilities, and in its administration and supervision.

2. The instruction should be made available and, whenever possible, free to those who need it, want it, and can profit by it.

3. The training programs and instructional contents should be developed, organized, and maintained subject to occupational opportunities and standards.

4. Vocational education, in its various training programs, should give both intensive short-unit courses and long-term instruction for those who need it and can afford to stay longer in training schools or centers.

5. The training programs should be planned, maintained and/or refined with the advice, assistance, and cooperation of representative organizations of management and labor in agriculture, commerce, trades and industries; public agencies, whose work affects education and planning of production and employment; and other organizations in a position to help advance the development of vocational education and technical training.

6. The conditions of instruction should be conducive to, and in keeping with, learning situations to meet industrial, agricultural, and commercial standards.

7. In making plans for training, provisions should be made to give greater flexibility in operating the various training programs. Local administrators must be sensitive to agricultural-industrial changes and needs.

8. The instructional, supervisory, and administrative personnel of the various training programs should be selected on the basis of occupational competency and professional background, respectively.

9. Adequate teacher-training program for the different phases of vocational education should be provided.

10. Adequate guidance service should be integrated in, and provided for, the various programs.

11. A continuing program of research should be maintained to secure, evaluate, and interpret statistical data as a basis for further planning and appraisal of going-on programs.

Aims and Functions. Originally and legally speaking, the controlling aim of this type of education under the provisions of the original vocational education law of this country, "shall be to fit the pupils for useful employment and to meet the needs of persons over 14 years of age who have entered upon or are preparing for trade or industrial pursuits or who have actually entered upon a trade or industrial pursuit." [6]

Under the envisioned economic development program, such training must be able (1) to meet the immediate and prospective manpower requirements of industry, (2) to provide opportunities for developing fully the capacities of the youth and adults in each particular region and in the country as a whole, and (3) to insure that the different phases of vocational education are directed toward the general wellbeing of the people by helping develop the human and natural resources for the purpose of raising the standards of living throughout the country.

Growth and Development. In order to determine the needs of vocational education in the Philippines that is capable of meeting the manpower requirements of the economic development program, it would be appropriate to elaborate briefly on its growth and development.

Legislative Commitments

Various legislations were enacted for the promotion of vocational education. As a whole, these legislative enactments are encouraging signs of the growing interest in, and recognition for, vocational education by national leaders.

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[6] Excerpts from Section 8, *Vocational Education Act* of 1927.

A perusal of the legislative commitments as enumerated in APPENDIX A, shows that they are wanting in financial implementation. The financial provisions of the original Vocational Education Act (Act No. 3377), for example, has not kept abreast with the growth and expansion of the vocational schools. Its financial commitment remains the same despite the increasing enrolment in these schools. The amendments of this Act in Republic Act No. 175 did not, in any way, improve the financial situation. While under the amended sections of this Act, the schools were allowed to collect tuition fees and utilize their production incomes to augment the financing of their operations, nevertheless no considerable improvement has been made in the facilities of these schools. The charging of tuition fees restrained many poor but desirous youth from entering these schools.

Piecemeal legislations were passed to bolster up the inadequate finances of some agricultural schools but not for the trade schools. It is believed that other vocational schools should, likewise, be helped to *improve their finances and facilities.* Some of these legislations (Republic Acts Nos. 43 and 301) established new schools for agriculture and, again, none for the trade schools.

Other legislations (Republic Acts No. 414 and 415) with regard to the development of home industries and teacher-training of vocational teachers were also passed but are still inoperative due to the non-release of funds to implement them financially.

In view of the positive role that these schools will play in the economic development program of the country, all the vocational schools should be adequately aided financially by the National government to improve their facilities and so as to admit more youth desirous of vocational training who will be needed to man the processes of industrialization.

Vocational Schools

Plate Nos. I and II show the geographical distribution of the public agricultural and trade schools throughout the country. There are at present four (4) national regional agricultural schools, thirteen (13) provincial agricultural schools, and nine (9) provincial rural high schools, or a total of twenty-six (26) schools offering vocational education in agriculture.

In trade and industrial education, there are three (3) national schools of arts and trades, and twenty-five (25) provincial and city trade schools, or a total of twenty-eight (28) trade schools.

LOCATION OF AGRICULTURAL AND RURAL HIGH SCHOOLS

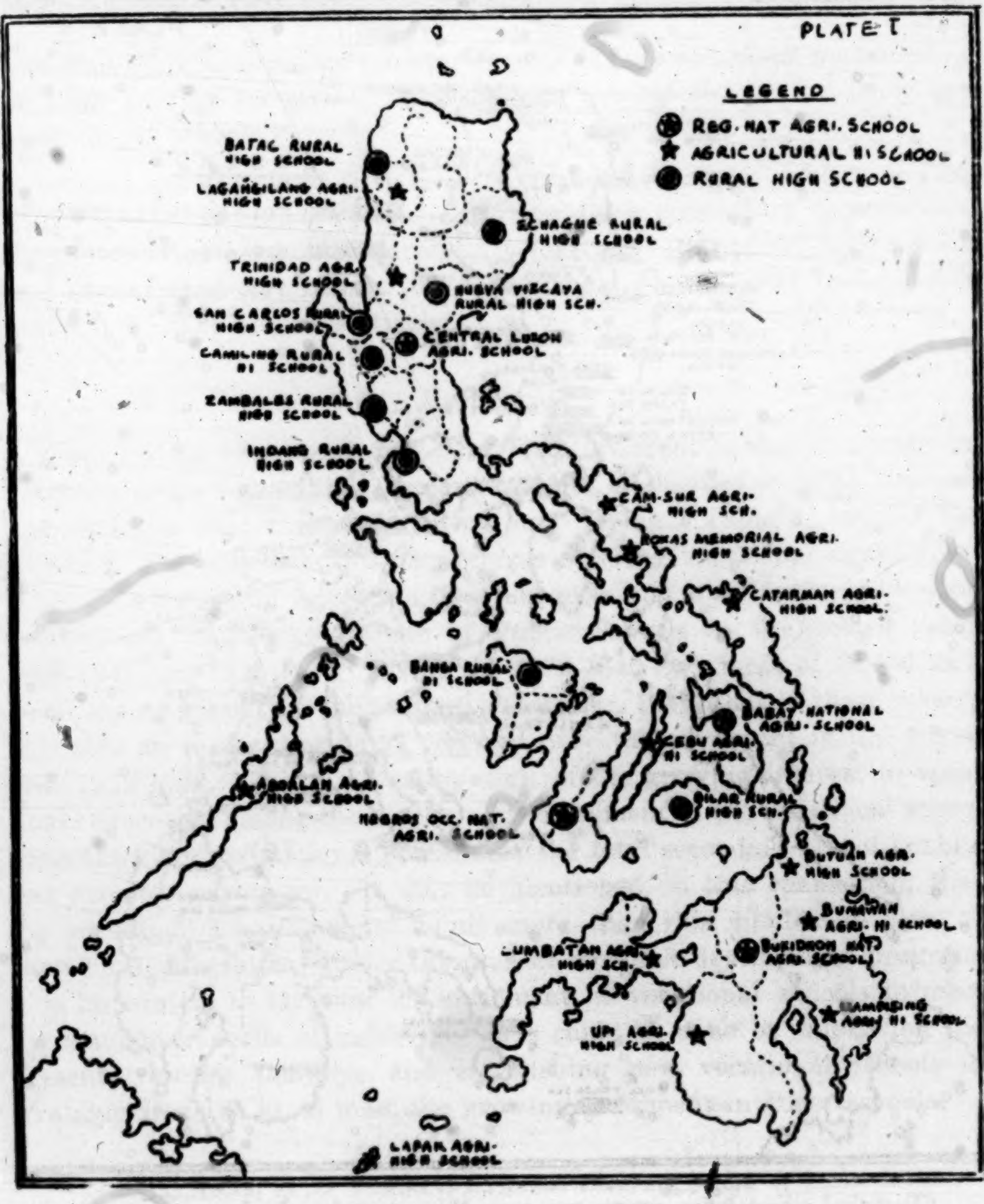
PLATE I
LEGEND
REG. NAT AGRI. SCHOOL
AGRICULTURAL HI SCHOOL
RURAL HIGH SCHOOL
BATAC RURAL HIGH SCHOOL
LAGANGILANG AGRI. HIGH SCHOOL
ECHAGUE RURAL HIGH SCHOOL
TRINIDAD AGRI. HIGH SCHOOL
NUEVA VIZCAYA RURAL HIGH SCH.
SAN CARLOS RURAL HIGH SCHOOL
CENTRAL LUZON AGRI. SCHOOL
CAMILING RURAL HI SCHOOL
ZAMBALES RURAL HIGH SCHOOL
INDANG RURAL HIGH SCHOOL
CAM-SUR AGRI-HIGH SCH.
ROXAS MEMORIAL AGRI. HIGH SCHOOL
CATARMAN AGRI-HIGH SCHOOL.
BANGA RURAL HI SCHOOL
BABAY NATIONAL AGRI. SCHOOL
CEBU AGRI. HI SCHOOL
ABORLAN AGRI. HIGH SCHOOL
NEGROS OCC. NAT. AGRI. SCHOOL
BILAR RURAL HIGH SCH.
BUTUAN AGR. HIGH SCHOOL
BUNAWAN AGRI. HI SCHOOL
LUMBATAN AGRI. HIGH SCH.
BUKIDNON NAT'L AGRI. SCHOOL
KAMBEING AGRI HI SCHOOL
UPI AGRI. HIGH SCHOOL
LAPAK AGRI. HIGH SCHOOL

LOCATION OF TECHNICAL SCHOOLS,* AND SECONDARY SCHOOLS

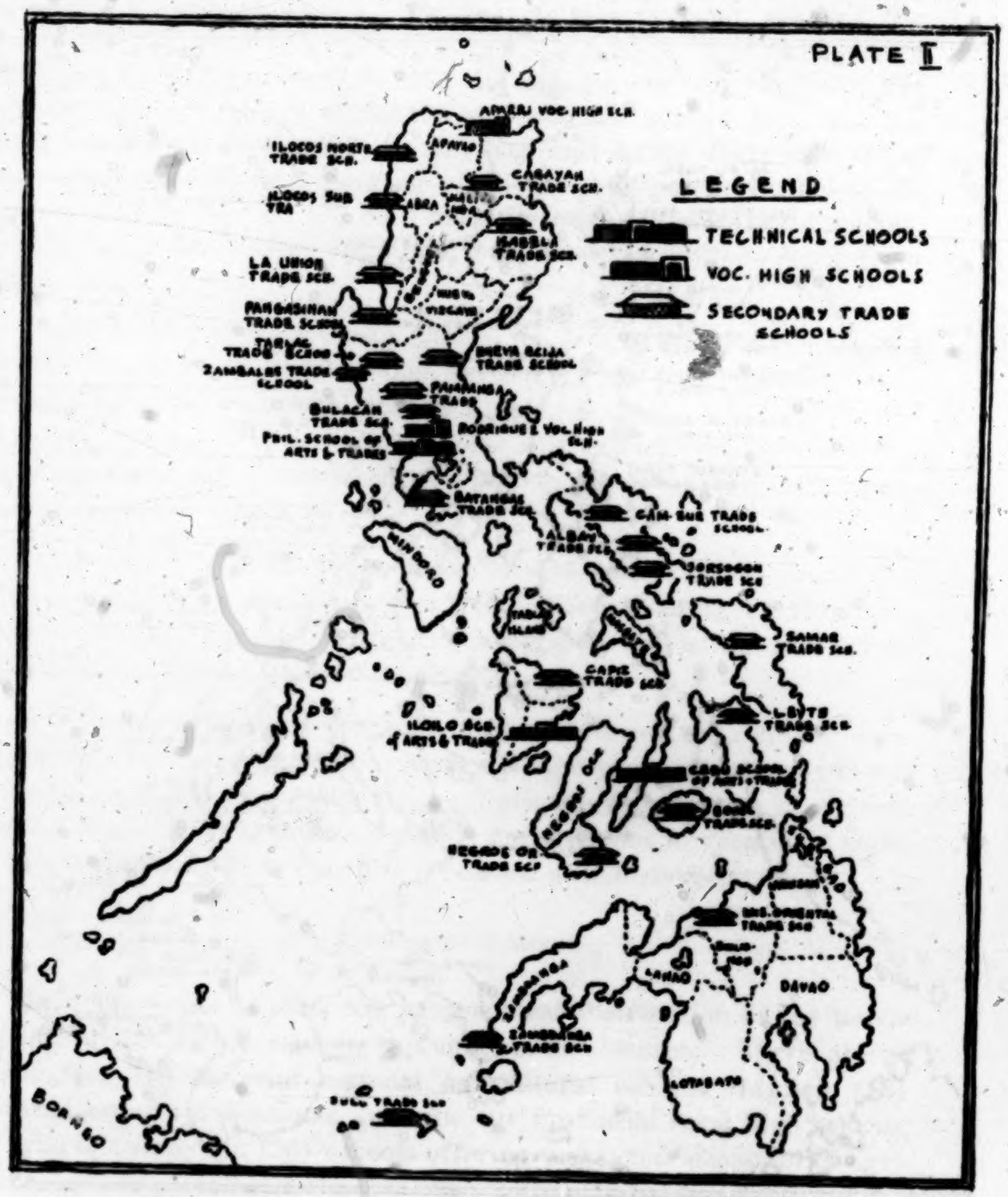
PLATE II
LEGEND
TECHNICAL SCHOOLS
VOC. HIGH SCHOOLS
SECONDARY TRADE SCHOOLS
APARRI VOC. HIGH SCH.
APAYAO
ILOCOS NORTE TRADE SCH.
CAGAYAN TRADE SCH.
ILOCOS SUR TRA
ABRA
ISABELA TRADE SCH.
LA UNION TRADE SCH.
NUEVA VIZCAYA
PANGASINAN TRADE SCHOOL
TARLAC TRADE SCHOOL
NUEVA ECIJA TRADE SCHOOL
ZAMBALES TRADE SCHOOL
PAMPANGA TRADE
BULACAN TRADE SCH.
RODRIGUEZ VOC. HIGH SCH.
PHIL. SCHOOL OF ARTS & TRADES
BATANGAS TRADE SCH.
CAM. SUR TRADE SCHOOL
ALBAY TRADE SCH.
SORSOGON TRADE SCH.
MINDORO
SAMAR TRADE SCH.
CAPIZ TRADE SCH.
LEYTE TRADE SCH.
ILOILO SCH. of ARTS & TRADES
CEBU SCHOOL OF ARTS & TRADES
BOHOL TRADE SCH.
NEGROS OCC.
NEGROS OR. TRADE SCH.
MIS. ORIENTAL TRADE SCH.
LANAO
DAVAO
ZAMBOANGA
ZAMBOANGA TRADE SCH.
COTABATO
SULU TRADE SCH.
BORNEO

*Technical schools offer courses two years above secondary level.

The Philippine School of Commerce in Manila, is the only commercial school under the supervision and administration of the Bureau of Public Schools. This school is run by a Superintendent. Before the war, it was an adjunct to the Philippine Normal School. It became a seperate school after liberation and started admitting students in the school year 1946-1947.

There are no separate schools for girls taking vocational homemaking or trade courses for girls. These courses are offered in the trade and agricultural schools.

There are at present fifty-five (55) [7] public vocational schools and ten (10)[8] private secondary schools offering some courses of a vocational category as against two hundred sixty-four (264) [9] general high schools and six hundred sixty-seven (667) [8] academic high schools under public and private auspices, respectively.

Enrolment

1. *Public Vocational Schools.* The enrolment in public vocational schools show a remarkable increase in spite of handicape as to finances and facilities that these schools are now facing. Table 4, reveals the trends in the enrolment of the schools offering vocational agriculture, trade and industrial education, and business and distributive education (commerce) under the Bureau of Public Schools in the school years 1939-1941 and 1945-1950. Using the 1939-1940 enrolment of 18,470 as a basis, the enrolment for the present school year, 1949-1950, of these schools indicates an increase of 51.97 per cent over the enrolment in the school year 1939-1940. This is a healthy sign of the growing interest in vocational education among the youth. The enrolment in the vocational school constitutes approximately 6 per cent of the total secondary school (public and private) enrolment. It may be mentioned, in this connection, that the vocational schools cannot admit more than this number in view of their limited facilities. Under the present economic development program, it is imperative to increase the enrolment in vocational schools to meet the manpower needs of industry. This could be done by improving the present training facilities and establishing new vocational schools in strategic areas so as to meet the growing enrolment in these schools.

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[7] From the records in the Vocational Education Division, Bureau of Public Schools.

[8] Orata, P. T. *Report on Secondary Education*, 1949, J. C. C. E. p. 47.

[9] 1948-1949 data taken from the Research and Measurement Division, Bureau of Public Schools.

TABLE 1.

TRENDS IN ENROLMENT IN THE DIFFERENT TYPES OF VOCATIONAL SCHOOLS OFFERING VARIOUS TRAINING PROGRAMS UNDER THE BUREAU OF PUBLIC SCHOOLS DURING THE SCHOOL YEAR 1939-1941 AND 1945-1950.[1]

School Year	Vocational Agriculture			Trades and Industries			Business and Distributive Education	Total	Increase (+) Decrease (—)	Percentage (+) Increase or (—) Decrease
	National	Provincial	Total	National	Provincial	Total				
1939-'40	1,754	5,886	7,640	2,368	8,363	10,731	99	18,470	Base	100.00
1940-'41	1,846	4,371	6,217	1,276	10,814	12,090	164	18,471	+ 1	+ .005
1945-'46	967	4,995	9,962	712	3,679	4,391	—	14,353	—4,117	— 22.29
1946-'47	1,937	7,071	9,003	1,117	7,036	8,153	149	17,305	—1,165	6.31
1947-'48	2,062	7,709	9,771	1,471	8,647	10,118	288	20,177	+1,707	+ 9.19
1948-'49	2,273	8,626	10,899	2,470	11,446	13,916	395	25,210	+6,740	+ 36.49
1949-'50	2,279	8,307	10,586	3,010	12,782	17,123	359	28,068	+9,598	+ 51.97

[1] Sources of data: B. P. S. Form Nos. 82 and 82-T and records of the Research and Measurement Division of the Bureau of Public Schools.

National Economic Council
January 10, 1950

It will be of interest to note also in Table 1, that the enrolment in the trade schools has been on the upward trend compared with those of vocational agricultural and commerce, in spite of the fact that these schools have always been very inadequately financed and equipped. The financing of the provincial trade schools is supposed to be shared by both the national and local governments, but this provision of law has remained a dead-letter insofar as the provincial trade schools' finances are concerned. In order to keep the provincial trade schools in operation, tuition fee as high as ₱75.00 has to be charged against students attending them. This, however, did not discourage students to enrol in the trade schools.

Table 2 below, shows the trend in enrolment in home economics:

TABLE 2

ENROLMENT IN HOME ECONOMICS IN THE DIFFERENT TYPES OF PUBLIC SECONDARY SCHOOLS DURING THE SCHOOL YEARS 1946-1949 [1]

Type of Secondary School	1946-'47	1947-'48	1948-'49
Agricultural and Rural High Schools	3,463	3,543	3,791
Trade Schools	251	399	742[2]
General Secondary Schools	30,529	37,307	34,577
Total	34,243	41,249	39,110

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[1] A report of the Problems of Vocational Education, J.C.C.E., 1949, p. 71.

[2] Data only from 8 out of the 27 trade schools.

2. *Private vocational schools*—Like the public vocational schools, some private schools have also been contributing in the vocational training of about 11,650 youth. Notable work along vocational line is being done in some private schools as in the National Radio Institute of Technology, National University, Central Institute of Technology, General Institute of Technology and other similar schools. These schools are tuition-fee schools. There are two types of vocational schools under private enterprises, namely, the technical high school (National University High School, Central Trade School, Feati Institute of Technology, etc.) and the so-called vocational schools. Under the first type, the students are

given practical training in some trades and industrial courses in addition to the required academic subjects, while in the latter type of school, the students are offered short term courses ranging from six months to two years. The schools under this type are the fashion schools; secretarial schools; schools offering radio operation, radio mechanics, and radio technician; or the refrigeration schools.

Table 3, shows the enrolment in the private vocational schools by courses as of December, 1948. It may be gleaned from this table that Stenography and Typewriting are the most popular courses among students. These are followed by automechanics and beauty culture. The distribution in the enrolment in private vocational schools is a reflection of the interest and the variety of vocational needs of the youth enrolled therein.

TABLE 3.

VOCATIONAL COURSES AND ENROLMENT IN PRIVATE SCHOOLS AS OF DECEMBER 28, 1948 [1]

Course	Enrolment
Typewriting	4,831
Stenography	2,301
Automechanics	1,252
Beauty culture	931
Diesel-engine mechanics	396
Embroidery	390
Bookkeeping	544
Radio operators	199
Commercial radio operators	162
Tailoring	107
Radio technician	81
Arts and trades	74
Radio mechanics	72
Radio courses	71
Auto driving	48
Refrigeration and air-conditioning	48
Master mechanics	40
Post telegraph	36
Machine shop	31
Applied electronics	28
Internal construction	7
Building construction	2
Total	**11,650**

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[1] A Report on the *Problems of Vocational Education* in the Philippines, J.C.E.E., page 95, Manila, 1949.

TABLE 4.

ANNUAL NUMBER OF GRADUATES IN THE DIFFERENT PUBLIC VOCATIONAL SCHOOLS [1]

SCHOOL YEAR	VOCATIONAL AGRICULTURE			TRADES AND INDUSTRIES			Business and Distributive Education	Total	Total Enrolment	Percentage Graduated
	National	Provincial	Total	National	Provincial	Total				
1946-1947	194	421	625	113	668	801	None	1,426	17,305	8.24
1947-1948	253	867	1,120	356	938	1,294	65	2,479	20,177	12.29
1948-1949	409	1,271	1,680	592	1,688	2,280	98	4,458	25,210	17.68

[1] Source: B. P. S. Form Nos. 18-a, 82 and 82-T.

National Economic Council
January 10, 1950

3. *Annual turn-over in public vocational schools*—The average annual turn-over of the vocational schools during the last three years was 2,788. The trend and number of graduates turned out by the vocational schools under public support during the last three years are shown in Table 4, covering the period from 1946-1949. The percentage of graduates in the vocational schools is within the normal expected percentage of 15 to 20. In the school year 1948-1949 alone, the public vocational schools turned out 4,458 graduates. This was 17.68 per cent of the total enrolment in the vocational schools. The annual turn-over of the vocational schools is too small to meet the manpower needs of industry of around 1,500,000 trained workers for the next ten years. Unless something is done immediately to improve the present facilities of the vocational schools, the solution to the problem of shortage of skilled labor will always remain unsolved.

For lack of follow-up studies, it is difficult to state categorically where the trained products of these schools are actually engaged in now. It is, however, the consensus of opinion among local school administrators that the graduates of the vocational schools are engaged in the vocations for which they were trained or in occupations related to their training and a few, not exceeding 2 per cent, continue higher education. It is gratifying to mention, however, that the graduates of the national agricultural schools, the national school of arts and trades, and the Philippine School of Commerce get employed or are contracted for employment faster than they could be graduated. Some students have to quit school even before graduation to accept employment. From this fact, at least, it could be said that the individual who is vocationally trained will always find a ready market for his services.

Curricula

The different curricula presently offered in the public vocational schools underwent a series of changes and refinement to meet changing conditions and needs.

1. *Vocational Agriculture* — The curricular offerings for vocational agriculture now prescribed for the agricultural and rural high schools, for both boys and girls, is promised on the philosophy fitting pupils for useful employment and of meeting the needs of persons over fourteen years old "who have entered upon or are preparing to enter upon the work of the farm or of the farm home." In other words, the training program is projected on a long-term instruction wherein the trainee is prepared for entrance into the business of farming or is helped improve that business if he has already entered upon it.

The goal of the training program is the development and acquisition of the necessary attitudes, knowledge, skills in crop and animal production. To attain all of these, practical work is emphasized throughout. The fieldwork in the vocational agriculture classes constitutes approximately 50 per cent of the total time spent for the entire curricular offerings. The technical subjects (horticulture and agronomy, including plant biology; animal husbandry, including animal biology; general and applied chemistry; farm physics and farm engineering; and farm economics) constitute about 16 per cent; the cultural subjects (English, general science, general mathematics, world history, Philippine social life, Philippine history and government and current events, Filipino National Language, and Spanish), 22 per cent; and other required subjects (health and physical education, and pre-military training), 11 per cent.

There is much to be desired in this training program for farm mechanics. The present program in farm mechanics is not in keeping with the trend in farm mechanization and the demand for skilled farm mechanics. There are only two schools, namely, the Central Luzon Agricultural School in Nueva Ecija and the Trinidad Agricultural School in Mountain Province now offering the course in farm mechanics. This course is offered only to graduates of the secondary agricultural curriculum for a period of one school year.

The mechanization of the farm would create a greater demand for trained farm mechanics to maintain, service, and repair the rolling stocks of the farm. To meet such increased demand for trained farm mechanics, there is a need for implementing the present secondary agricultural curriculum by incorporating farm mechanics in the whole secondary agricultural curriculum year by year on a graduated level of difficulty.

2. *The Need for Trade Training*—It will not be very long from now when the Philippines will become prominently an industrial nation. The transition in our socio-economic set-up from a purely agrarian to a semi-industrial state is not the making of any man. It will come as a natural course of any growing population like ours. We cannot depend on our agriculture alone for our economic survival. We need to industrialize in order to survive against the forces of the surrounding social and economic scene.

The proposed industrial projects, which the country will soon embark, will eventually result in the creation of new jobs which will offer to the youth and able-bodied adults greater employment opportunities. In this connection, our program of trade and industrial education will play a vital role in the training of the needed manpower for the industry. Since this training program embraces a very wide field of occupational areas, it is in a better position to serve a greater number of people than any of the other phases of vocational education.

The introduction and use of power machines for mass production in the manufacturing field, will result in the vertical release of labor and the elimination of handskilled personnel in production. However, the growing complexity and continuous perfection of such machines will always create a demand for highly-skilled workers and mechanics as well as semi-skilled workers to operate, adjust, repair, service, and maintain them.

As the Philippines enters her state of industrialization, the importance of the work in industry of the modern unskilled and semi-skilled workers will be greatly felt while the high cost of both the materials and the machines with which they will use will cause the employers and industry to realize that such workers must be trained.

The demand for the training of skilled mechanics and technicians of all grades started as early as the factory period and the beginning of the use of power machines. However, the demand for the mass training of machine operators and similar low-grade factory workers is of comparatively recent origin considering the fact that this was not felt by employers and industrialists in the United States until about the beginning of World War II when America was forced to keep the wheels of her industries running for twenty-four hours a day. And, because of the acute need for trained workers, some of America's progressive manufacturers even provided training programs for their workers right in their plants. Since this was an expensive venture on the part of factory owners, the work and responsibility of training workers had to be transferred to the schools.

The experiences of American industry during the last two world wars have taught her the value of trained workers and have demonstrated to her the need for effective training of factory workers of all categories. The tendency now in all American trade schools is to train industrial workers of all grades. The Philippines should profit from these valuable experiences of America to attain the greatest optimum return from her investments and efforts.

In all probability, modern industry will demand the services of different categories of trained workers such as: (1) unskilled workers, (2) semi-skilled operators, (3) skilled mechanics, (4) foremen, and (5) junior technicians. Apparently, the differences in the duties of these different industrial workers reflect the differences and complexity of the training programs which modern industry will find hard to meet unless the vocational schools, particularly the trade schools, will play their part (training the needed manpower) in the gigantic program of our industrialization. The training for these various grades of industrial workers are briefly discussed in APPENDIX B.

3. *Trade and Industrial Education—Curricula*—The national schools of arts and trades offer both the technical and the teacher of arts and trades[10] curricula to graduates of secondary schools of recognized standing. The provincial and city trade schools offer the Four-Year Secondary Trade and the Two-Year Special Trade Curricula. In the latter two curricula, the entrance requirements for admission are graduation from the elementary grades and physical fitness. Legally, these students must be at least 14 years of age at the time of enrolment.

The Four-Year Trade Curriculum provides training in auto-mechanics, furniture making, building construction, sheet metalwork practical electricity, radio mechanics and radio operation, diesel engine mechanics, stationary and marine engineering, machine shop, drafting, and forging and smithing. In addition to these courses, the trade schools provide citizenship training in accordance with the educational mandate of the Constitution. Side by side with the trade courses for boys, the trade schools offer courses for girls along skilled trades, such as dressmaking, man's tailoring, cosmetology (hair science and beauty culture), and handicrafts.

The Two-Year Special Trade Curriculum is offered on the basis of two years intensive training. This curriculum provides training to boys and girls along the same skilled trades offered under the four-year secondary trade curriculum. Each of the trade courses offered under the two year special trade curriculum are given on the basis of the short-unit training program. That is, each short-unit course would require from four to eighteen weeks for completion. The training under this program is more intensive since the non-related subjects have been omitted. Hence, more time is devoted to practical training. This curriculum is intended for mature students who desire to learn a trade in a much shorter period.

As indicated above, the technical curriculum is offered only in the national schools of arts and trades to graduates of secondary schools. The training program under this curriculum provides intensive technical (theory and practice) instruction in the highly specialized trades. The aim of this curriculum is to train the desired technicians for the economic development program and to meet the needs of industry.

4. *Business and Distributive Education*—The Philippine School of Commerce is the only public school offering business and distributive

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[10] Candidates should qualify in the entrance tests before they are admitted.

education on the junior college level. The greater portion of this training program is sponsored by private enterprises. The different curricula, consistent with the modern philosophy of business education, under this program are representative of the different types of business activities in the Philippines. The controlling purpose of this type of vocational training is the preparation of individual for successful entrance into the business and distributive occupation.

Short-unit courses in bookkeeping and accounting, secretarial work, and retail merchandising are offered in both the day and night classes. The courses given to students attending classes in the evening are slightly modified.

In the school year 1946-1947, the Philipine School of Commerce inaugurated a training program which was given a good reception by the Philippine business world. This business and distributive education training scheme provides an opportunity for the students to obtain practical on-the-job training and experience in business offices, stores, and shops. This method of training, as has been popularized in the United States, vitalizes and improves classroom instruction by integrating both the theory and practice. The Smith Bell and Co., Ltd.; H. E. Heacock and Co., Inc.; F. H. Stevens and Co.; Ginn and Co.; Phil-American Life Insurance Corporation; U. S. Life Insurance Co.; O. E. S. and S. Co., Inc; Standard Vacuum Oil Co.; Theo H. Davis and Co.; Filipinas Insurance Co.; and a few others, are some of the business firms which cooperated with the Philippine School of Commerce in carrying out this program.

5. *Home Economics Education* — The purpose of home economics education is to fit the individual in the responsibilities of home-making. Instruction, therefore, centers on the home activities. Home economics courses for girls, as previously mentioned, are prescribed in the agricultural and rural, trade, and general secondary schools. Home economics is allotted much longer time in the vocational schools than in the general high schools where it is given only on an 80-minute-a-day period. The time allotted to this type of training in the vocational schools is from two to three hours daily.

Training Facilities

Even before the Pacific War in 1941, the public vocational schools could not be said to be adequately provided with suitable quarters, equipment and funds to carry out successfully their training programs. The last war wrought untold destruction on the entire school plants. Many vocational schools are still in prostrate condition. It will take many years to rehabilitate these schools unless they are adequately aided from other sources. What has been left by the war in vocational equipment is not only obsolete, but also very inadequate to meet the training needs of the fast growing enrolment in these schools. Special legislations enacted after the liberation, however, as indicated elsewhere in the treatise, are solely for the rehabilitation of facilities of the agricultural schools. The trade schools have never been aided by any special national appropriation in the rehabilitation of their equipment. While the enrolment in the vocational schools has continually to be on the upward trend, no provision has as yet been made for the preparation of the needed teachers and supervisory personnel for lack of funds. The vocational classes have increased to a considerable degree but the supervisory personnel, particularly those in the General Office of the Bureau of Public Schools, have not increased.

1. *Agricultural Schools* — Many of the agricultural school buildings were totally or partially destroyed during the war. Most of the classes are being held in temporary makeshifts buildings which are not conducive to effective learning. The problem of accommodation is still far from being solved even with the present enrolment in the agricultural schools. However, the recent releases of war-damage awards for the reconstruction of buildings have partly eased the situation.

Another pressing problem which the agricultural schools are now facing, is the inadequacy of the farm land available for instructional purposes, especially for the small agricultural and rural high schools. To provide effective training in vocational agriculture, it is necessary that each student is given sufficient land space of at least 2 to 4 hectares to till for his practical training.

An efficient program of agricultural education requires ample animal stock, farm tools, machinery, and other instructional aids and devices. The present supply of tools and equipment as well as reference books in the agricultural schools is far from being adequate. This is especially true in mechanical equipment. The inadequacy of agricultural implements is causing a great annoyance in the administration of these schools. The inadequate appropriation, particularly for the small agricultural schools, has been a drawback in effecting the desired training.

Recently, the Bukidnon National Agricultural School was awarded ₱220,000.00 for the purchase of equipment and supplies by the United States-Philippine War Damage Commission. This award will be of some assistance in equipping this school.

2. *The Trade Schools* — The Trade Schools are not an exception in this respect. All the pre-war buildings of these schools were completely or partially destroyed during the last war. Temporary buildings had to be constructed to accommodate the students. With the partial release of war-

damage awards, however, in the amount of ₱1,203,375.00 permanent structures are now being built up. The accommodation of all students desiring trade training is now an acute problem which merits immediate attention. The enrolment in the trade schools has increased steadily since 1945. The enrolment of 4,391 in 1945 has jumped up to 17,123 in 1949-1950 school year. The trade schools have been badly stripped of their prewar equipment. To replace partially the lost equipment of the trade schools, they were allotted some surplus equipment and reparations machines from Japan with a total gross tonnage of about 400. Most of these reparations machines, however, are not fit for instructional purposes since they are obsolete and not in running condition. To repair these machines will require a big financial outlay which may be wisely invested in new modern equipment. To carry out successfully the trade and industrial education program, the trade schools must be provided with adequate and modern equipment similar to those used in industry. The minimum requirements of tools and equipment for the trade courses now in operation have been used as a basis for estimating the needed financial outlay for this purpose.

Recently, the Philippine School of Arts and Trades was awarded ₱280,000.00 by the United States-Philippine War Damage Commission for the purchase of vocational equipment and supplies. This amount will go a long way in the proper equipping of this school. It may be mentioned, however, that the kind and quantity of equipment of this school destroyed during the war was much bigger than this award.

3. *Commercial School* — The Philippine School of Commerce is presently housed in buildings acquired from the Alien Property Administration through the efforts of its Superintendent. These buildings have been remodeled to suit instructional condition. With the creation of its teacher-training department, this school will face the problem of accommodation since the present plant is not commodious enough for its present enrolment. A new building, approximately containing ten classrooms, will be needed.

Another problem which beset the efficiency of instruction in the Philippine School of Commerce is the apparent shortage of modern equipment in business. For lack of sufficient funds, the school has not been able to purchase such needed equipment.

4. *Vocational Homemaking and Trade Courses for Girls* — Vocational homemaking and trade courses for girls now being offered in the agricultural and trade schools for the preparation of future homemakers and in diversified occupations for girls outside of the home would be brought up to accepted standards if the facilities for training are made adequate and brought up-to-date. Under present conditions of the agri-

TABLE 5.

AVERAGE YEARLY ADDITIONAL APPROPRIATION NEEDED FOR THE VOCATIONAL SCHOOLS TO BRING THE FACILITIES TO STANDARD WITHIN A PERIOD OF FIVE YEARS

(1950-1954)

	Vocational Education in Agriculture	Trade & Industrial Education	Homemaking & Vocational Trades for Girls	Business & Distributive Education
Buildings	₱ 490,200.00	₱ 403,750.00	——	₱ 27,000.00
Equipment:				
(1) Farm tools, work animal and machinery	546,095.92	——	——	——
(2) Shop handtools, machinery and equipment	132,579.40	572,000.00		
(3) Laboratory equipment and supplies	63,000.00	33,400.00	₱ 125,669.50	
(4) Reference materials	42,930.90	41,280.00	32,400.00	₱ 1,600.00 [1]
Classroom furniture and equipment	29,305.40	94,000.00		15,000.00 [2]
Total	₱1,304,111.62	₱1,144,430.00	₱ 158,069.50	₱ 43,600.00
GRAND TOTAL				₱2,650,211.12

[1] Includes general reading and references.

[2] Includes laboratory equipment.

cultural and trade schools, this particular training program of the girls is being carried out under great handicaps by using obsolete and by the inadequacy of tools and equipment as well as reference materials.

A summary of financial implementation of the immediate needs in training facilities, broken down on a yearly basis, is shown in Table 5. It is revealed in this table that vocational education in agriculture, requires ₱1,304,111.62 for needed buildings, farm machinery, and classroom furniture and equipment; ₱1,144,430.00, for trade and industrial education; ₱158,069.50, for homemaking and vocational trade for girls; ₱43,600.00, for business and distributive education; or a total amount of ₱2,650,211.12. If this financial proposal is carried out, the public vocational schools could better serve the students enrolled in them, and at the same time, they would be in a position to take care of the increasing enrolment.

Commercial Production

The production of crops and animals and animal by-products and commercial articles in the agricultural and trade schools is not the goal of vocational education. These are only means to attain the objective of these schools. The production of such industrial articles and agricultural products is only incidental to teaching. In some degree, however, the effectiveness of instruction may be evaluated by the quality and quantity of the products raised and the articles fabricated by these schools. This point has been brought out merely to indicate the positive contribution which vocational training could extend in the development of our economic structure if and when given adequate support.

Table 6, below, shows the gross production of the agricultural schools and some of the trade schools in the school year 1948-1949.

TABLE 6.

GROSS PRODUCTION INCOME FROM CROPS AND ANNUAL ENTERPRISES IN THE AGRICULTURAL SCHOOLS AND COMMERCIAL PRODUCTION OF ARTICLES IN THE TRADE SCHOOLS DURING THE SCHOOL YEAR 1948-1949

Type of Schools	Gross Value of Production
Agricultural Schools	₱ 569,424.89 [1]
Trade Schools	₱ 752,767.80 [2]
Total	₱1,322,192.69

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[1] More than one-half of the gross production comes from the three national agricultural schools (Central Luzon, Baybay & Bukidnon).

[2] This is a partial report from twenty-three (23) trade schools.

The Home Industries — The mechanization of the farm and the gradual transition of our socio-economic set-up from the purely agrarian to a semi-industrial state would offer to the farm workers more leisure time than they presently enjoy and may also result to the displacement of labor in industry and waste of human resources. Unemployment is a serious social problem which merit top attention. This problem, however, will always find a ready solution in the development of home industries.

The enactment of Republic Act No. 414 is an expression of the desire of the government to improve rural life and community living by increasing the income of the family, and incidentally, its consuming power. The government is committed to do this through home industries which are to be intensified and implemented by the operation of the Craftsman Section of the Vocational Education Division recently reactivated by this Act.

The fact that the big industries could employ only a limited number of workers, the big majority of the working class who cannot be absorbed by these big industries will find ready employment in small rural industries which may be developed to supplement the people's principal pursuits in any rural community where raw materials abound. The development of home industries in every village will not only prevent the unnecessary overcrowding of displaced people in the metropolitan centers, but will also attract farmers and farm hands to stay on the farms. It would be necessary, however, that the people in rural areas be afforded with such conveniences, such as electricity, good roads, recreational centers, public libraries, play grounds, greater educational opportunities, and the like, similar to those enjoyed by people in urban centers. This is one way of preventing the trek of farmers in rural areas in favor of conveniences which they will enjoy and try to seek in cities.

To give the home industries greater impetus, it would be necessary that the people who are engaged in such enterprises be availed with the use of electric power so that they will be able to use simple devices or small machines to hasten or step-up their production. The use of mechanical contrivances will make it convenient and easier for rural people to produce greater quantities of goods cheaper and faster without necessarily sacrificing quality.

The contributions of the home industries to the economic welfare of the people, particularly those of the rural areas, cannot be overemphasized. It is a well known fact that the economic history of many progressive countries of the world reveals that their home industries have been contributing much of their economic development and to the improvement of the standard of living of the people. This is especially true in case of Denmark, Switzerland, Holland, Norway, Sweden, and Japan. The home industries of these countries have not only improved the people's standard of living, but they have also increased their tax-contributing ability as well as developed their ability to consume and conserve material goods wisely.

Japan, for instance, has flooded the Philippines and world market with many cheap consumer goods. These are not made in Japan's big industries, but in the homes of the people in rural areas. It is not amiss to state, in this connection, that the home industries promoted and organized by the Philippine government welfare agencies during the dark days of the Japanese occupation saved many Filipino families from hunger and from the acute shortage of the prime necessities of life.

The home industries in a future industrialized Philippines are not intended to supplant the existing major industries, such as agriculture, manufacturing, and the like, but will supplement them with a view to augmenting the income of the average Filipino family. As such, the home industries would probably be the best solution to the many socio-economic ills which beset our democratic way of life today. These are not all that could be said about the benefits which could be derived from the home industries. During a state of emergency, when all the big industries become paralyzed, the home industries will always manage to survive. The home industries will always pay bigger dividends and will always be beneficial to a larger number of people than the big industries.

Present Financial Support of the Vocational Schools — The financing of public vocational education has always remained a perennial problem confronting the school authorities. Under the provisions of Vocational Education Act No. 3377, Section 2, the financing of vocational schools is to be shared both by the local (provincial, city, or municipal) and the national governments, the latter to provide aid equal to two times the amount appropriated and made available by a province, city or municipality applying for aid. This provision of the Act, however, has never been carried out fully. Table 8 shows the number of vocational schools now receiving financial aid from the provincial or city government. It can be seen in this table that a little over half a million pesos was appropriated during the 1948-1949 fiscal year for the support of provincial vocational schools.

TABLE 7.

PROVINCIAL APPROPRIATIONS OF LOCAL GOVERNMENTS TO PROVINCIAL AND CITY VOCATIONAL SCHOOLS DURING THE FISCAL YEAR, 1948-1949[1]

Types of Schools	No. of Schools Benefitting from Provincial Appropriations	Amount Appropriated
Agricultural schools	8	₱109,513.93
Trade schools	12	441,453.88
Total	20	₱550,967.81

[1] Data from B. E. Form No. 82 and 82-*T*.

With the exception of a few agricultural schools whose finances were augmented by operation of Republic Act Nos. 301 and 303, the finances of most vocational schools have always remained to be inadequate to operate and maintain them successfully.

The appropriations for the operation and maintenance of provincial agricultural schools and trade schools have not kept pace with the increasing enrollment. This is particularly true with the trade schools. The trends in enrolments and appropriations for the vocational schools are clearly revealed in Table 8.

Comparing the national appropriation for the national agricultural schools and the national schools of arts and trades, as indicated in Table 8, the latter shows a downward trend in national appropriation per student, whereas the former registered an upward trend. A similar situation exists in the provincial vocational schools. The national aid per student in the trade schools continues to decrease because of the increasing enrolment, since these schools have never received additional national appropriations other than that given as aid under the provisions of the Vocational Education Act of 1927.

For the operation and maintenance of vocational schools, the amount of ₱2,159,086.00 has been appropriated for the fiscal year 1949-1950. ***This amount is barely 1.6 per cent of the total appropriation of ₱139,592,-***

TABLE 8.

ESTIMATED TRENDS OF AVERAGE PER STUDENT NATIONAL APPROPRIATIONS AND AIDS ON THE BASIS OF ANNUAL ENROLMENT (SCHOOL YEARS, 1945-1950) AND TOTAL NATIONAL APPROPRIATIONS AND AIDS IN THE DIFFERENT VOCATIONAL SCHOOLS.[1]

School Year	TRADE SCHOOLS						AGRICULTURAL SCHOOLS					
	National School of Arts and Trades			Provincial Trade			National Agricultural			Provincial Agricultural		
	Enrolment	National Appropriation	Estimated Per Student[1] Appropriation	Enrolment	National Appropriation	Estimated Per Student Appropriation	Enrolment	National Aid	Estimated Per Student[1] National Aid	Enrolment	National Aid	Estimated Per Student National Appropriation
		(Pesos)	(Pesos)		(Pesos)	(Pesos)		(Pesos)	(Pesos)		(Pesos)	(Pesos)
1945-46	712	101,350[2]	142.34	3,679	142,400	38.70	967	261,050	269.95	4,995	417,825	83.64
1946-47	1,117	112,350[2]	140.22	7,036	155,655	22.12	1,937	263,120	135.83	7,071	437,342	61.85
1947-48	1,471	113,350[2]	87.31	8,647	145,401	16.82	2,062	533,630[3]	258.79	7,709	465,928	60.43
1948-49	2,470	145,345[2]	70.31	11,446	177,407	15.50	2,273	536,715[3]	236.12	8,626	732,279[4]	84.89
1949-50	3,010	269,455[5]	89.52	12,762	187,172	14.64	2,279	699,285[5]	306.84	8,307	925,174[4]	111.13

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[1] The estimate does not include salaries and wages of some personnel or of supplies and equipment, as C.L.A.S. and F.S.A.T., provided for in the General Appropriation Act for the Bureau of Public Schools which also contribute, directly or indirectly, in the instruction, supervision and administration of these schools. It does not also include value of or depreciation in the use of fixed assets (land, buildings, or equipment) previously acquired.

[2] The enrolment of the Philippine School of Arts and Trades was not considered in the estimate as this school operates directly from the appropriations of the Bureau of Public Schools.

[3] This unprecedented increase in national appropriations has been due to the opening of the Negros Occidental National Agricultural School.

[4] This increase in appropriation has been due to the financial implementation of Republic Act Nos. 301 and 303.

[5] C.L.A.S. and P.S.A.T. estimate of current expenses for their operation and maintenance carried in the general appropriations of the Bureau of Public Schools are included.

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208[11] *for public schools.* The national aid and appropriation for the vocational schools have been distributed as follows:

TRAINING PROGRAM	APPROPRIATION	PERCENTS	NUMBER OF SCHOOLS	ENROLMENT
1. Agricultural Education	₱1,622,459.00	75.01	26	10,586
a. National agricultural schools ₱699,285.00				
b. Provincial agricultural schools — ₱925,174.00				
2. Trade and Industrial Education	456,627.00	21.14	28	17,123
a. National schools of arts and trades — ₱269,455.00				
b. Provincial and city trades school — ₱187,172.00				
3. Business and Distributive Education	80,000.00	3.85	1	359
Total	₱2,159,086.00	100.0	55	28,068

From the figures above, it can be seen that ₱223.12 per student goes to the support of business and distributive education, ₱153.27 goes to agricultural education, and ₱26.66 goes to trade and industrial education. It can also be gleaned from the above figures that *for every peso appropriated for the support of public schools, barely one and one-half centavos (₱0.016) are appropriated* for the support of vocational education. Out of every peso appropriated for the support of public schools, agricultural schools are allotted one and two tenths (1.2) per cent whereas the trade schools are allotted a little over three tent (0.3) of a per cent.

The average per-student aid of ₱26.66 for trade and industrial education is indeed very low considering the low purchasing power of the peso at present and notwithstanding the importance that this training program will play in the economic development of the country. Because of this acute financial difficulty, the trade schools have to charge tuition fees to students to as high as ₱75.00 to meet part of their operating expenses. This policy is at variance and, no doubt, runs counter with the intents and purposes of vocational training as provided for in the Constitution and of the original provisions of the Vocational Education Act of 1927. It is discouraging to poor but deserving students who cannot afford to pay the fee. This state of affairs will be a drawback in the training of the needed manpower for the industrialization program unless the trade schools are given more financial aid by the National Government.

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[11] Source: School Finance Division, Bureau of Public Schools.

Table 9 shows the number of agricultural schools and trade schools collecting tuition fees and the amount collected by these schools during the school year 1948-1949. The amount collected was intended to augment the finances of these schools so that they could purchase immediately the badly needed equipment and handtools.

TABLE 9.

AMOUNT OF TUITION FEES COLLECTED FROM STUDENTS ATTENDING THE PROVINCIAL AND CITY VOCATIONAL SCHOOLS DURING THE SCHOOL YEAR 1948-1949 [1]

Types of Schools	No. of Schools which collected Tuition Fees	Amount Collected
Agricultural Schools	7	₱ 61,394.73
Trade Schools [2]	10	101,696.38
Total	17	₱163,091.11

[1] Data from B.P.S. Form Nos. 82 and 82-*T*.

[2] Report for trade schools is only partial. Almost all trade schools are now charging tuition fees.

As previously mentioned, the passage of Republic Act No. 175, which legalized the charging of tuition fees has made vocational education no longer free education, and therefore, not accessible to those who cannot afford to pay the tuition fee. A new Section, 11-A, however, wherein the school income shall accrue to the school to be used for improving the facilities of the school, is one of the new good features of Vocational Education Act No. 3377, as amended by Republic Act No. 175. Production can be realized, however, if the vocational schools are immediately provided with tools, equipment, and supplies for production.

In order that the overall program of vocational education can be properly administered and supervised, can meet the vocational training needs of both in- and out-of-school youth and adults, and be able to supply the greater portion of the need for trained manpower of the economic

TABLE 10.

AVERAGE YEARLY FINANCING PROGRAM FOR VOCATIONAL EDUCATION COVERING FISCAL YEARS 1950-1954

An average yearly financial outlay of ₱10,094,011.12 or approximately ₱50,470,055.60 for the five-year period, 1950-1954, will be needed to bring the training programs and the administration and supervision of vocational education to standard.

Item	Average Yearly Financial Outlay		
	Presently Appropriated	Additional Amount Needed	Total
1. For the construction of needed buildings for the fifty-five (55) vocational schools.			
(1) Agricultural schools	₱ ———	₱ 490,200.00	₱ 490,200.00
(2) Trade and industrial schools.............	———	403,750.00	403,750.00
(3) Commercial schools (PSC)	———	27,000.00	27,000.00
Total	———	₱ 920,950.00	₱ 920,950.00
2. For the acquisition of additional instructional equipment, machinery, and supplies and classroom furniture for the fifty-five (55) vocational schools.			

Item	Average Yearly Financial Outlay		
	Presently Appropriated	Additional Amount Needed	Total
(1) Agricultural schools	₱ 150,000.00	₱ 663,911.62	₱ 813,911.62
(2) Trade and industrial schools	——	740,680.00	740,680.00
(3) Commercial schools	——	16,600.00	16,600.00
(4) Homemaking and vocational trades for girls [1]	——	158,069.50	158,069.50
Total	₱ 150,000.00	₱1,579,261.12	₱1,729,261.12
3. For salaries and wages of additional teaching positions and other personnel [2]			
(1) Agricultural schools (178 new teaching positions at ₱1,800)	——	₱ 320,000.00	₱ 320,000.00
(2) Trade and industrial schools (184 new teaching positions at ₱1,800)	——	331,200.00	331,200.00
(3) Commercial school (8 personnel) [3]	——	15,660.00	15,660.00
(4) Vocational counselors	——	28,800.00	28,800.00
Total	——	₱ 695,660.00	₱ 695,660.00

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[1] Girls enrolled in agricultural and trade schools.

[2] Only during the first year 1950-1951, on the basis of present enrolment and includes teachers for homemaking and vocational trades for girls in agricultural and trade schools.

[3] Two supervisors at ₱3,120, one instructor at ₱2,400, one typewriter-mechanic at ₱1,800, one general clerk at ₱1,800, and three laborers at ₱1,140.00

Item	Average Yearly Financial Outlay		
	Presently Appropriated	Additional Amount Needed	Total
4. For the establishment and operation and maintenance of teacher-training departments in agricultural, trade and industrial, and business and distributive education.[4]			
(1) Salaries and wages	₱ 177,992.50	₱ 81,600.00	₱ 259,592.50
(2) Sundry expenses	40,339.08	42,400.00	82,739.08
(3) Furniture and equipment	117,668.42	108,800.00	226,468.42
(4) Buildings	162,000.00	15,600.00	177,600.00
(5) Special purposes	2,000.00	1,600.00	3,600.00
Total	₱ 500,000.00[5]	₱ 250,000.00	₱ 750,000.00
5. For the operation and maintenance of eight (8) national vocational schools			

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[4] For operation and maintenance of teacher-training departments of the Philippine School of Arts and Trades, Iloilo School of Arts and Trades, and Cebu School of Arts and Trades; and establishment and operation and maintenance of teacher-training departments in the Central Luzon Agricultural School, Bukidnon National Agricultural School, Baybay National Agricultural School, and the Philippine School of Commerce. For the first three schools, the teacher-training departments are operated and maintained in conjunction with the overall budget of each school

[5] Authorized under Republic Act No. 415 but not yet released.

Item	Average Yearly Financial Outlay Presently Appropriated	 Additional Amount Needed	 Total
(1) Agricultural schools:			
a. Central Luzon Agricultural School	₱ 191,875.00	₱ 8,125.00	₱ 200,000.00
b. Bukidnon National Agricultural School	65,410.00	134,590.00	200,000.00
c. Baybay National Agricultural School	60,000.00	90,000.00	150,000.00
d. Negros Occidental National Agricultural School	291,000.00	——	291,000.00
(2) Trade-technical schools:			
a. Philippine School of Arts and Trades	122,000.00	78,000.00	200,000.00
b. Iloilo School of Arts and Trades	71,205.00	78,795.00	150,000.00
c. Cebu School of Arts and Trades	64,250.00	87,750.00	150,000.00
(3) Business and Distributive Education schools:			
a. Philippine School of Commerce	80,000.00	70,000.00	150,000.00
Total	₱ 945,740.00	₱ 545,260.00	₱1,491,000.00
6. For aid in the operation and maintenance of provincial and city vocational schools.[6]			
(1) Agricultural schools	₱ 851,174.00	₱ 338,826.00	₱1,190,000.00
(2) Trade Schools	152,482.00	1,486,518.00	1,639,000.00
Total	₱1,003,656.00	₱1,825,344.00	₱2,829,000.00

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[6] Includes appropriations authorized under Republic Act Nos. 301 (₱50,360.00) and 303 (₱358,306.00); and J-IV-4 (₱8,000.00), J-IV-5 (₱166,065.00), J-IV-6 (₱247,685.00), J-IV-9 (₱80,260.00), J-IV-10 (₱42,980.00), and J-IV-17 (₱50,000.00).

Item	Average Yearly Financial Outlay		
	Presently Appropriated	Additional Amount Needed	Total
7. For the operation and maintenance of the Craftsman Section of the Vocational Education Division	₱ 150,000.00[7]	———	₱ 150,000.00
Total	₱ 150,000.00	———	₱ 150,000.00
8. For the transfer and conversion and operation and maintenance of the Vocational Education of the Bureau of Public Schools into an Office of Vocational Education directly under the Department of Education	₱ 62,580.00[8]	₱ 167,420.00[9]	₱ 230,000.00[10]
Total	₱ 62,580.00	₱ 167,420.00	₱ 230,000.00
9. For the conversion and operation and maintenance thereafter of two (2) provincial vocational schools yearly, one of the Central Luzon Agricultural School type and another one of			

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[7] Authorized under Republic Act No. 414 but not yet released.

[8] Represents only salaries and wages of the needed personnel to be transferred, the total outlay for salaries and wages being ₱99,720.00.

[9] Includes all other expenses.

[10] This is distributed as follows: ₱210,000.00 for the first year; ₱220,000.00, second year; ₱230,000.00, third year; ₱240,000.00, fourth year; and ₱250,000.00 fifth year.

Item	Average Yearly Financial Outlay		
	Presently Appropriated	Additional Amount Needed	Total
the Philippine School of Arts and Trades Type:			
(1) Agricultural school [11]	₱ 65,555.00 [13]	₱ 134,445.00	₱ 200,000.00 [14]
(2) Trade school [12]	6,640.00 [13]	193,360.00	200,000.00 [14]
Total	₱ 72,195.00	₱ 327,805.00	₱ 400,000.00
10. For the establishment and operation and maintenance of national regional vocational schools of the type of the Central Luzon Agricultural School, Philippine School of Arts and Trades,			

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[11] The schools proposed to be converted into national agricultural schools of the CLAS type are: Camarines Sur Agricultural High School, Lagañgilang (Abra) Agricultural High School, Mampising (Davao) Agricultural High School, Upi (Cotabato) Agricultural High School, and Trinidad (Mountain) Agricultural High School.

[12] The schools proposed to be converted into national schools of arts and trades are: Zamboanga City Trade School, Leyte Trade School, Camarines Sur Trade School, La Union Trade School, and Nueva Ecija Trade School.

[13] Estimated present average operating expenses of the schools proposed to be converted.

[14] Estimated at ₱300,000.00 for the first year, ₱250,000.00 for the second year, ₱200,000.00 for the third year, ₱150,000.00 for the fourth year, and ₱100,000.00 for the fifth year, and yearly thereafter.

and Philippine School of Commerce.[15]			
(1) Agricultural schools	——	₱ 300,000.00	₱ 300,000.00
(2) Arts and trade schools	——	300,000.00	300,000.00
(3) Business and distributive education School	——	200,000.00	200,000.00
Total	——	₱ 800,000.00	₱ 800,000.00
11. For the expenses of technical assistance			
(1) For the expenses of thirty (30) trainees abroad at ₱2,000.00 [16] each	——	₱ 60,000.00	₱ 60,000.00
(2) For the expenses of four (4) experts to be invited to come to the country at ₱9,530.00 [17] each	——	38,140.00	38,140.00
Total	——	₱ 98,140.00	₱ 98,140.00
GRAND TOTAL	₱2,884,171.00	₱7,209,840.12	₱10,094,011.12

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[15] One school of each type is proposed to be established yearly. Agricultural schools — Iloilo and Cagayan Valley (Isabela); Arts and trades schools — Davao, and Surigao; and Business and distributive education schools — Cebu, and Davao.

[16] Covers only transportation expenses at ₱1,500.00 and clothing allowance at ₱500.00

[17] Covers only per diem and traveling expenses in the Philippines while on tour of duty. The services of these four (4) will be needed only for the fiscal year 1950-51 for teacher-training programs in agricultural, trade and industrial, and business and distributive educational; and for occupational information and guidance.

development program, there is proposed, in this report, a yearly financing program as indicated in Table 10.

This financing program presupposes to take care of expending the training programs and to meet expenses for salaries of additional teachers and other personnel, establishment and operation and maintenance of teacher-training departments, operation and maintenance of the existing national vocational schools, aid in the operation and maintenance of provincial and city vocational schools, operation and maintenance of the Craftsman Section, transfer and conversion of the Vocational Education Division of the Bureau of Public Schools into an Office of Vocational Education placed directly under the Deparment of Education, conversion and operation and maintenance of provincial vocational schools yearly into national regional vocational schools, establishment and operation and maintenance of vocational schools of the national regional type, and expenses for technical assistance.

The average yearly outlay under this financing program is estimated at ₱10,094,011.12, or an aggregate sum of ₱50,470,055.60 for the five-year period, 1950-1954. Since a yearly appropriation at an average of ₱2,884,171.00 has been appropriated for the present overall program of vocational education, the amount of ₱7,209,840.12 will be needed to augment the present finances for vocational education.

Teacher Training — Our program of vocational education cannot be carried on effectively and efficiently unless we have teachers who are not only technically and occupationally but also professionally trained. It is not amiss to mention, in this connection, the fact that only approximately 17 per cent of the present teachers of industrial arts are professionally trained. This condition is not any better in the program of vocational education *per se*. In the case of the trade school teachers, only 15.49 per cent are graduates of the teachers course in arts and trades,[12] 26.50 per cent are holders of B.S.E. degree, and 0.68 per cent are holders of M.A. degree as shown in Table 11. The rest are either technical graduates of the national schools of arts and trades or secondary trade schools graduates only. These teachers have not been prepared to teach, but to work in the industrial field.

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[12] The teacher's course in arts and trades is intended for the preparation of elementary industrial arts teachers. Since there are no professionally-trained teachers for trade education, a number of teachers' course graduates in arts and trades have been assigned to the trade schools who are at least better prepared than other applicants.

TABLE 11.

QUALIFICATIONS OF TEACHERS IN THE TRADE SCHOOLS DURING THE SCHOOL YEAR 1949-1950

Qualification	Number	Percentage
1. Master of Arts in Education	5	0.68
2. Bachelor of Science in Education or equivalents	211	28.68
3. Teachers Course	114	15.49
4. Technical Course — P.S.A.T. and Secondary Trade	216	29.34
5. Junior Normal and Undergraduate (BSE)	95	12.91
6. Provincial Secondary Trade Graduate	30	4.06
7. High School with Certificate in Vocational Course	47	6.39
8. Others	48	2.45
Total	736	100.00

Of the total number of vocational teachers in agriculture, 52.36 per cent are holders of Bachelor of Science in Agriculture degree and 11.52 per cent are with Certificate in agricultural education. This shows how inadequate the technical and professional training of our vocational agriculture teachers compared with those teaching academic subjects in the general high schools where the minimum educational qualification is the possession of a B.S.E. degree. Normally, there should be, at least, 75 per cent of the vocational teachers with both the technical and professional qualifications combined. Table 12 shows the educational status of teachers in the agricultural schools.

TABLE 12.

QUALIFICATIONS OF TEACHERS IN THE AGRICULTURAL SCHOOLS DURING THE SCHOOL YEAR 1949-1950

Qualification	Number	Percentage
I. Academic Teachers:		
1. Bachelor of Science in Education or equivalents	111	50.92
2. Other College Graduate	21	9.63
3. Normal Graduate	26	11.73
4. College Undergraduate	60	27.52
Total	218	100.00

II. Vocational Teachers:		
1. Masters Degree	2	1.05
2. Bachelor of Science in Agriculture with Certificate in Agriculture Education	22	11.52
3. Bachelor of Science in Agriculture	100	52.36
4. Doctor of Veterinary Medicine	8	4.19
5. Bachelor of Science in Forestry	1	0.52
6. College Undergraduate	8	4.19
7. P.S.A.T. Graduate	23	12.04
8. Agricultural High School Graduate	27	14.13
Total	191	100.00
GRAND TOTAL	409	

The percentage of professionally and technically prepared vocational teachers is much lower in the general high schools where a big number of practical arts teachers are employed.

In order to carry out successfully the different phases of vocational education in the trade and agricultural schools, there is an urgent need of training more vocational teachers consistent with the projected expansion of these schools to provide training for the needed manpower of industry. To this date, the amount of ₱500,000.00 authorized to be appropriated through the enactment of Republic Act No. 415 should be certified and released immediately to enable the teacher-training departments of the vocational schools concerned to perform their function enunciated in this Act.

To carry out the intents and purposes of Republic Act No. 415 with regard to the training of teachers of practical arts and trades courses for the secondary schools, it is imperative that the proposed legislation appended hereto under APPENDIX "C" be presented to Congress when it convenes as an Administration *must* bill so that it would be given immediate action. Any further delay in the training of the needed teachers for vocational courses, particularly those for the trade and industries, will mean the delay of the training of the needed manpower for the envisaged economic development program.

Besides the poor status of the teachers' professional and technical preparation now in the service, there is a need for additional qualified teachers and other personnel to bring the instructional and administrative phases to accepted vocational training standards. It is estimated that with the present enrolment of 28,068 students in the public vocational schools, approximately 178 additional teachers in vocational education in agriculture and homemaking will be needed; 184, for trade and industrial education, including teachers for trade courses for girls; and 8, for business and distributive education, including personnel other than teaching. For this purpose, an estimated total amount of ₱666,860.00 for salaries and wages will be needed.

Advanced Training for Teachers and Technical Assistance from Foreign Countries. In order to further implement and step-up the different training programs in consonance with modern trends and practices, it is believed necessary in our efforts to synchronize vocational training with the envisioned economic development program to send teachers for advanced training in line with the teaching of specific areas in vocational education and also trainees for specific technical field in modern industrial-agricultural-commercial practices abroad. Likewise, technical assistance in the form of bringing in of experts from foreign countries should be taken advantage of. This is in line with announced Point Four Program of President Truman to extend technical assistance to underdeveloped countries like the Philippines.

Technical assistance may be carried out in two ways, viz., (1) the bringing in of technical experts from the United States, and (2) the sending of trainees or fellows to the United States. The period of training abroad should not be shorter than one year. It may be prolonged depending upon the need of the special technical training to be undertaken. Assistance will be needed in the following:

1. Experts to be brought into the Philipines. This group will assist in the organization and administration of teacher-training programs:

   a. One for trade and industrial education
   b. One for agricultural education
   c. One for business and distributive education
   d. One for homemaking and vocational courses for girls

To meet the expenses in the forms of per diems and traveling expenses and other allowances of these four experts who will be needed only during the fiscal year 1950-1951, it is estimated that the amount of ₱9,530.00 will be needed for each expert for one year or a total of ₱38,120.00 for the four experts indicated above, all such expenses to be borne by the Philippine Government.

2. Sending trainees abroad:

   a. *Teacher-training* (5)

(1) One for trade and industrial education
(2) One for agricultural education
(3) One for business and distributive education
(4) One for vocational homemaking and trade courses for girls.
(5) One for guidance and counselling

b. *Agricultural education* (6)
(1) Two for farm mechanization work
(2) One for animal improvement work
(3) One for soil conservation practice
(4) One for irrigation and drainage
(5) One for farm shop-planning, organization and maintenance

c. *Trade and industrial education* (15)
(1) One for foundry and welding
(2) One for machine shop, tool, and die-making
(3) One for diesel and stationary engineering (including marine engineering)
(4) One for woodworking machines — installation, maintenance, and repair
(5) One for automotive trades
(6) One for radio and electrical industry
(7) One for refrigeration and air-conditioning
(8) One for textile designing and weaving
(9) One for ceramics
(10) One for plastic arts
(11) One for printing and graphic arts
(12) One for cabinet making — designing and finishing, particularly radio cabinets
(13) One for paper and pulp industry
(14) One for coking industry
(15) One for fertilizers industry

d. *Business and distributive education* (2)
(1) One for retail salesmanship
(2) One for store management

e. *Homemaking and vocational trades for girls* (2)
(1) One for household interior designing and decoration
(2) One for quantity cookery (cafeteria service)

To meet the expenses in the form of traveling expenses at the rate of ₱1,500.00 and clothing allowance of ₱500.00 for each of the thirty (30) trainees proposed herein, a total outlay of ₱2,000.000 for each trainee or a total yearly outlay of ₱60,000.00 for the thirty (30) trainees will be needed. The corresponding amount to be applied for from the United States or any United Nations sponsoring agency is estimated at $3,500.00 per trainee or $105,000.00 for the thirty (30) trainees each year.

III. GENERAL EDUCATION

Basic Principles of General Education

It is vital to public welfare that every individual be educated in the common activities of life. Since general education is the broad base for any vocational or terminal education, the following basic principles should be the criteria for this type of education:

1. It is the constitutional right of every child and youth to be given the opportunity, more than all other educational opportunities, to become proficient in whatever tool of learning (writing, reading, arithmetic, speaking or listening and observing) he will need in his particular life activities. Each child and youth must have an appreciation of immediate as well as deferred values and a disposition to lay the ground work for any future studies he may choose to follow and to undertake.

2. Every child or youth should develop an insight into ethical and moral values and principles; that is, giving due respect for other persons and be able to live and work cooperatively with others. He should be stimulated and aided to define his personal and social purposes in life.

3. Since every child and youth will, at some time, participate in many ways in carrying out citizenship responsibilities, citizenship education should occupy a prominent place in the program of general education. Much of the leadership in business, in industrial organizations, in community activities, in civic and governmental affairs now come and will continue to come from this source. General education, while it serves as a sound foundation for any terminal training, also provides opportunities to prepare our youth for such leadership.

4. Physical, mental, and emotional health and safety are basic to other types of learnings. They are the very warp and woof of satisfactory home and family life. General education should interweave in its patterns health and safety for every child and youth which could be met through a comprehensive program of health service, health and safety instruction, and physical education.

5. In our times, when economic efficiency is stressed, education must help and guide the individual to understand, plan and develop

the economies of his life, his discriminating sense of values regarding his expenditures, and the operation of the economy of the country as a whole. In other words, consumer education must be given impetus as a phase of general education.

6. General education should meet the need for a sound, practical education for home and family living for every child or youth of both sexes. One of the most important responsibilities of this phase of education is to improve and develop family life. This phase of education should inspire understanding and acquire for the child or youth factual knowledge, basic skills, and abilities necessary for homemaking and for successful participation in family life.

7. Provision should be made to acquaint children and youth in the use of leisure time profitably, so that it may become a cultural resource rather than resource for social liability. Opportunities should be given them to develop their capacities to appreciate beauty in literature, art, music, and nature.

8. The offering of work experiences of the non-specialized-vocational-training nature to every youth, consistent with the prevailing occupations in the community in which he lives, must be a part of the general education scheme. These are desirable experiences inasmuch as they are related to the present-day total program of education.

9. Since it is the function of general education to prepare the individual to assume his place in productive undertaking, steps should be taken to train the youth in the ways and needs of an industrial society. To this end, a comprehensive guidance program in every school offering general education should be inaugurated. This guidance program, in order to be effective, must give adequate occupational information; secure information about the individuals through personal inventory; assist individuals to interpret their personal data through counseling; offer exploration and training opportunities; assist in the placement of school-leavers, graduates and drop-outs; make continuous follow-up of school-leavers; and conduct researches in this field for purposes of evaluating the whole educational and guidance programs.

Aims and Function. Primarily, all education should aim to develop a happy, useful, and productive citizenry. Under this concept, general education has a very important aim to accomplish and specific functions to perform in the total education of the youth. It should provide the individual with such basic training as would enable him to discharge his duties as a citizen and as a useful member of his family. Our program of general education should have these peculiar characteristics:

1. The general secondary education program should be flexible enough to meet the needs of the Filipino youth of all abilities, regardless of occupational inclinations or stations in life.

2. It should not be standardized so that it will secure for all Filipino youth the best general education which the community can afford to give.

The practical arts offerings in the general high school are not in any way intended to supplant the vocational courses offered in the special vocational schools; rather, they serve as foundational courses for the pursuit of the specialized vocational courses. The practical arts courses in the general secondary education program are not only intended for guidance purposes, but also to provide the youth with such desired work experiences to better develop in them good work habits and desirable attitudes toward manual labor. With this direct participation in the occupations of socio-economic value, the youth will learn to appreciate industrial life and the world of work in which they would subsequently live and work.

In view of the fact that the desired tool subjects in the general education program are very well known to the educators, the parents, and the patrons of the school, they need not be discussed in detail. Instead, more space will be devoted in this treatise to describe fully the functions of the practical arts courses in providing the youth with a well-balanced education.

Functions of Practical Arts. — In the accomplishment of the aim of education, the practical arts offerings of the general secondary education program have specific functions to perform. Among them are the following:

1. *Orientation function.* — An individual who has had experience of training in practical arts would be in a better position to orient himself in a semi-industrialized or industrialized society than one who has had no training in it. In this connection, manipulation is fundamentally the means of promoting other ends. Desirable habits and skills are easily formed through such medium. However, emphasis is primarily directed toward the attainment of desired patterns of knowledge, attitudes, habits, understandings and skills which are essential to the individual himself and to an industrialized society.

2. *Technical function.* — Practical arts provides opportunities for the youth to study the various occupations which may help him defining his specialized interests for him to pursue with profit. For instance, the trainee is given an opportunity to examine minutely the intricacies of the automative trade, woodworking trade, building trade,

retail trade, electrical trade, and the like, in each of which he is given a chance to plan, design and write specifications and meet other problems related to the trades and industrial pursuits of the community as represented in the school laboratory.

3. *Social function.* — Practical arts provides such experiences as are valuable in the development of social habits and attitudes. The practical arts program is designed to help the student understand the social environment in which he will subsequently live and work. He studies the housing condition, sanitation, hours of work, wages, safety, conservation of natural and material resources, and other related problems.

4. *Wise consumption of products.* — One of the primary functions of practical arts is to develop intelligent attitudes and understanding about the selection and use of industrial products. This function of practical arts includes also studies about the manufacture and distribution of consumer's goods as well as their wise use by the consumer.

5. *Wise use of leisure.* — The practical arts courses open the way for the individual to cultivate interests in a wide variety of wholesome leisure-time pursuits. Leisure time when used in an avocation may bring not only enjoyment, but also material profit which may supplement his income from his principal pursuit.

6. *Cultural function.* — This function of practical arts will aid the individual in understanding and deriving enjoyment from the finer things of life as are involved in technical and industrial society in which he lives. This is achieved by teaching him how to develop and use his cultural and material heritage. In practical arts, for instance, the student learns how to distinguish period of style in furniture, or design in architecture, in rug, china, pottery, silverware, and other articles commonly used. He will learn to appreciate the forces which influenced such designs. With a cultured taste, the individual would be in a better position to select and use wisely the things he buys and uses.

Relation of General Education to Vocational Education. — From the foregoing discussions, it is clear that general education is not in any way opposed to vocational education; it is the beginning of any vocational pursuit. It serves as a foundation without which success in any vocational career would not be possible since the education of a citizen-worker requires a sound foundation of general education. Then, too, the training for successful entrance into the occupations would be much shortened.

The success or failure of the envisaged economic development program has to depend much on the soundness or the weakness of our general education program. No matter how good or how sound an economic plan is, if our people have wrong attitudes towards work such plan will fail to materialize. The material wealth of the country will remain at its lowest ebb and the people will become economic slaves of other nations.

Its Growth and Development. — Much have been said and written about the defects of our present school system. Among the defects pointed out is that the various curricula of the system have not been meeting our present needs and, therefore, need revamping. Changes, however, have been made in the different curricula by shifting and eliminating some subjects and introducing new ones such as the practical arts courses, commonly known as *general* "vocational" courses. These courses have not been adequately provided with tools and equipment, as well as materials, because of the financial inability of the provinces maintaining the general high schools.

In order that the individual and society may get the desired benefits from the practical arts courses, they must be taught by highly qualified teachers and administered and supervised by personnel who have the desired work habits and right attitudes toward manual labor. These sources should be taught, not by the traditional chalk-and-blackboard or talk method, but on-the-job training method. That is, the learner should actually participate in the job to give him first-hand work experiences.

The general secondary curriculum has made rapid stride in its enrolment, but it has not kept pace with the fast socio-economic changes obtaining in the country. There is, therefore, a need for readjusting and revising the curricular offerings of the secondary schools to meet these changes. This does not mean standardization of the curriculum. On the contrary, it means the generalization of the curriculum so that it would be capable of meeting the needs of the community and all youth of secondary-school age subject to the limitations of the resources of the people and community it serves. While the curricular offerings outside the subjects may differ, the controlling purposes of education should be the same for all in accord with the educational mandate of the constitution. These controlling purposes must be enforced in both the public and private schools.

The tables below show the distribution of the high school students enrolled in both the public and private high schools:

TABLE 13.

ENROLLMENT IN THE PUBLIC SECONDARY SCHOOLS BY CURRICULUM AS OF THE SCHOOL YEAR 1948-1949

(Data taken from the statistical tables of the Bureau of Public Schools)

Curriculum	Number of Schools	Enrolment	Average Enrolment	Percentage
General	264	171,295[2]	671	88.60
Trade	25[1]	11,649[3]	465	11.40
Agriculture	26	10,027	385	
Normal	1	312	312	
Fishery	1	53	53	
Total	317	193,366	609	

TABLE 14.

ENROLMENT IN SECONDARY PRIVATE SCHOOLS[4]

(Based on data supplied by the Bureau of Private Schools)

As of January, 1947

Curriculum	Number	Enrolment	Average Enrolment	Percentage
Academic	667	184,404	276	96
Commercial	4	356	89	4
Normal	2	109	503	
Home Economics	2	109	55	
Aeronautics[5]	1	137	137	
Agricultural[6]	1	38	38	

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[1] This figure does not include the three national school of arts and trades which are largely on the junior college level.

[2] This does not include collegiate enrolment of the national school of arts and trades which is 1,267 students.

[3] Includes enrolment of home economics of 1,818.

[4] Orata, P.T. Report on Secondary Education submitted to the Congressional Committee on Education, p. 47.

[5] FEATI

[6] Araneta Institute of Agriculture.

TABLE 15.

TRENDS IN ENROLMENT IN THE PUBLIC SECONDARY SCHOOLS DURING THE SCHOOL YEARS 1940-1941 AND 1945-1949

(Based from the Statistical Tables of the Bureau of Public Schools)

Curriculum	1940-41	1945-46	1946-47	1947-48	1948-49
Academic	60,951	——	——	——	——
General	16,193	101,467	137,893	159,398	169,477
Trade	10,814	4,390	7,564	10,026	11,649
Agriculture	6,217	6,415	9,518	9,398	10,027
Normal	868	205	291	289	312
Fishery	——	——	——	——	53
Home Economics	5,944	210	522	1,362	1,818
Total	100,987	112,687	155,788	180,468	193,336

IV. GUIDANCE

The present-day society is characterized by its complicity and rapidity of change. These characteristics are so profound that their impact upon the social and the vocational life of the people are direct and immediate. They have, therefore, a direct bearing on the need for guidance of the youth and even the adults of today. From this point of view, it is essential that the schools must provide the needed guidance services to the youth attending them so that their functions may be coordinated.

Role of Guidance in the Educational Program—Guidance is conceived as a comprehensive service through which the objectives of education may be fully and effectively realized. It is an essential part of the function of education in the proper development of youth. Guidance is an integral part of any going-on program of education and not merely an isolated appendage in the functions of the schools.

The youth and adults in the schools will always find ready helps from a counselor, particularly in the solutions of problems relating to their educational and/or vocational choices. The individual is often confronted with the problem of choosing his particular vocational career from many different vocations in a complex and changing society. It is through the services of guidance that the individual is afforded a wide array of information concerning the various alternatives and opportunities open to him as well as the probable consequences of his particular vocational choice. He must have to give adequate consideration to the demands which the particular vocation may make upon him, the conditions surrounding that vocation, his own likes and dislikes, his talents, and the extent of vocational preparation required. The individual needs adequate and effective guidance to enable him to do all these efficiently.

The changing social and economic order—from a purely agrarian to a semi-industrial state—places upon the schools the responsibility of guiding the youth so that they may become useful not only to themselves but also to society.

Guidance Responsibilities of Schools—In a study made on the number and percentage of survival under each grade level[11] from the school years 1925 to 1939, it was revealed that of those who enrolled in Grade I only 45.01 per cent, reached Grade IV; 26.43 per cent, reached First Year; and 3.45 per cent, hardly reached the Fourth Year. That opportunities were given those who drop out in matters of life adjustment is an educational problem which has a direct implication to guidance. Juvenile delinquencies, crimes of various kinds, or unemployment may be minimized if schools will teach work and develop in individuals their capacities and interest instead of teaching subject matter, thus paving the way for them toward economic and social usefulness.

Since education has the responsibilty of preparing the individual to take his proper place in productive effort, the future of this country depends, in no small measure, upon the provision that schools make for the training of youth in the ways and needs of our society and economy. The provision of training for every youth best adapted to his abilities calculated to develop his maximum usefulness to himself, his community and country, can be accomplished through the aid of a comprehensive guidance service in every school. The success of our vocational training program is predicated on the assumption that adequate and effective guidance services have been rendered to the youth.

Guidance Services the Schools Should Have. As a keystone of the school program, the guidance services which must be made available to all youth must include provisions for:

1. A *continuous inventory* of the individual's learning characteristics, scholastic achievement, aptitudes, adjustments, attitudes, interests, and physical as well as mental development. The profile of the individual may be known through the study of such factors as school marks, anecdotal records, test results and their interpretations, work experiments, hobbies and play interest, home environment, and attendance records. This assay of the individual will help in assisting him in solving his educational problems as well as meeting his needs.

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[11] Bureau of Education, Bulletin No. 3, s. 1940.

2. *Information services* which provide: (a) occupational information based upon reliable data at the local, regional and national levels regarding the number of people employed, the number of workers likely to be employed each year in a specific type of work, and analysis of job requirements to match abilities and qualifications, ways and opportunities for promotion, and the like, all of which can be obtained from occupational surveys, census and labor department statistics through the aid of a counselor, and (b) exploration of training opportunities within the school as well as in the community.

3. *Counseling service* provides competent advice in aiding the individual to interpret his personal inventory, to plan intelligently, and to develop himself in the occupational area to which he is best suited and expects to be employed.

4. A *continuous follow-up* of all school-leavers, whether graduates or drop-outs, is provided. The success of the school's training program can be determined by examining its products. Apparently, with a follow-up service the success or failure of the individual and the training program may be evaluated. This guidance service is intended to help the individual in effecting the desired occupational life adjustment.

The results of the follow-up are invaluable tools of research and aid in determining the kind of guidance services to be rendered to school-leavers and in determining what revisions are to be effected in the training program. They may likewise be used as bases in the formulation of educational policies.

5. The *placement services* is intended to assist the individual in locating himself in the world of work. The provision of such service is premised on the assumption that it is the duty of the training agency to help the trainee get an employment after the completion of his training or after making decision to quit school. The money invested in the education of the individual would be an economic waste unless he is employed in an occupation of economic value. It should be the primary concern, let alone the responsibilities of the training agency, therefore, to sell its products as fast possible.

Counseling is continued up to the time the young worker is employed. Occupational adjustment will have to be made until the worker finds a job from which he could derive the greatest success, pleasure, contentment, and happiness. Summing up, all these will constitute service of incalculable value which could be rendered to the youth through the guidance program.

APPENDIX A

LEGISLATION FOR THE PROMOTION OF VOCATIONAL EDUCATION

1. *Act No. 74 of the Philippine Commission, 1901.* Under this Act, the Philippine School of Arts and Trades and a national agricultural school were established in 1901. Sections 23 and 24 of the Act, provided for an appropriation of $15,000.00 for the establishment and maintenance of each of these schools. The sum not to exceed $400,000.00 was also appropriated for the construction of the needed buildings. Following the establishment of these schools were the opening of the school shops and farm schools. The present provincial trade and agricultural schools are the outgrowth of the school shops and farm schools.

2. *Vocational Education Act of 1927* (Act No. 3377). In view of the dire need of promoting vocational education, the Philippine Legislature passed in 1927, Act No. 3377, otherwise known as the Vocational Education Act of 1927. The Act became a law on December 3, 1927. It provided, among other things, for the promotion of vocational education along agriculture, commerce, home economics, and trades and industries for both boys and girls over 14 years of age "who have entered upon or are preparaing to enter upon the work of the farm or farm home or a trade or industrial pursuit."

Among the significant features of the Act are (1) creation of the Division of Vocational Education; (2) creation of the Department of Agricultural Education in the College of Agriculture, University of the Philippines; (3) creation of scholarships for teachers of vocational subjects; and, (4) the encouragement of studies and investigations relative to problems of the administration of vocational schools, courses of study, industrial requirements, as well as industrial processes and industrial pursuits. Because of inadequate appropriation, some of the provisions of this law are not being fulfilled.

3. *Commonwealth Act Nos. 300, 313, and 446.* Under Commonwealth Act No. 300, the sum of ₱350,000.00 was set aside for the conversion of the Iloilo and Cebu trade schools and the Baybay and Bukidnon agricultural schools into national schools. This amount was augmented by another appropriation of ₱308,450.00 authorized under Commonwealth Act No. 446.

Another legislation which gave greater recognition to the importance of vocational education was Commonwealth Act No. 313 of 1938, approved by the President on June 9 of that year. This is an authorization Act which paved the way for the establishment and/or conversion of existing vocational schools into regional national trade schools of the type of the Philippine School of Arts and Trades and regional national agricultural schools of the Central Luzon Agricultural School type. The Cebu and Iloilo trade schools and the Baybay and Bukidnon agricultural schools were converted into national regional schools under the provisions of this Act.

4. *Republic Act No. 43.* This legislation, which took effect on October 2, 1946, authorized the Secretary of Public Instruction to establish, organize, and maintain a national agricultural school of the Central Luzon Agricultural School type in the Province of Negros Occidental. The Act provided the sum of ₱300,000.00 for the establishment, operation, and maintenance of this school during its first year, and indicated that adequate sums needed in subsequent years be provided for its operation and maintenance. All of these went into effect after its approval.

5. *Republic Act Nos. 175 and 364.* Republic Act No. 175 amended the provisions of Sections 2 and 9 and added a new section, II-A, to the original Vocational Education Act (Act No. 3377) of 1927. Republic Act No. 175, amending the above-mentioned Sections of Act No. 3377, authorized the local school authorities to collect tuition fees from students attending the vocational schools. The new Section, II-A, provided that all school income shall be set aside as special trust fund for each vocational school and shall be disposed of for the benefit of the school concerned as the local school authorities see fit. In view of the inadequate provisions of Republic Act No. 175, the national vocational schools which were not established under the provisions of Act No. 3377, are not as free as they should be in spending their own income for their improvement. In view of this difficulty, Republic Act No. 364 was then passed by Congress and approved by the President on June 9, 1949, to correct the deficiency of Republic Act No. 175. This new Act authorized *all vocational schools* to collect tuition fees, receive contributions from private persons, and contract loans from government or private banks and other financial institutions, and to create a special fund for each national vocational school.

6. *Republic Act No. 301.* This Act authorized the Secretary of Education to establish, organize and maintain one national junior agricultural high school in Bunawan, Province of Agusan. This Act was passed by Congress and signed by the President on June 17, 1948. To carry out the purposes of this Act, the sum of ₱50,000.00 was made avail-

able during the first year of operation of the school. Adequate sums shall also be provided the school in subsequent years of operation and maintenance.

7. *Republic Act No. 303.*—On account of the urgent need for more funds for the vocational schools which were badly damaged during the last war, the Congress, in its last session in 1948, passed Republic Act No. 303 wherein the sum of ₱400,000.00 was appropriated for the maintenance of the Pili Agricultural School, Camarines Sur; the Guinobatan Rural High School, Albay; the Sta. Maria Agricultural High School, Ilocos Sur; the Lumbatan Agricultural High School, Cotabato; the Indang Rural High School, Cavite; and the San Carlos Rural High School, Pangasinan.

8. *Republic Act No. 336.* This Act authorizes the President of the Philippines to use any savings from the appropriations for the Executive Department in the General Appropriations Act for the fiscal year 1948-1949 for the operation of all existing normal schools, for the establishment and operation of additional normal schools, and for the rehabilitation and expansion of the Upi Agricultural School in Cotabato, the Bukidnon National Agricultural School, the Lagañgilang Agricultural High School in Abra, and the Cabagan Farm School in Isabela. The intention of the Act was very plausible but the named agricultural schools did not actually benefit from the Act for lack of sufficient savings to effect the rehabilitation and expansion desired in these vocational schools.

9. *Republic Act No. 414*—This is an Act which appropriated the sum of ₱150,000.00 for the promotion of home industries and the revival as well as the operation and maintenance of the Craftsman Section of the Vocational Education Division in the Bureau of Public Schools. The basic philosophy of the Act is the revival and reactivation of the home industries which have been the mainstay of our rural economy. With the passage of this Act, the training of craftsmen can be facilitated and at the same time special training centers can be organized to stimulate the development of home industries in rural communities. The amount appropriated under the provision of this law has not as yet been certified and released by the Secretary of Finance. Hence, the law has remained to be inoperative.

10. *Republic Act No. 415.*—This Act appropriated the sum of ₱500,000.00 for the operation and maintenance of the teacher-training departments of the existing national schools of arts and trades and the creation of teacher-training departments in the Central Luzon Agricultural Schools, Bukidnon National Agricultural School, Baybay National Agricultural School and the Philippine School of Commerce for the training of teachers of industrial arts, trades, agriculture, and business,

respectively, for both the elementary and the secondary schools. With the passage and approval of this Act, much headway can be done in the preparation of industrial arts and vocational teachers, which has been a top problem in the different training programs in the vocational schools and general high schools offering the practical arts courses. The provision of this Act is still a dead-letter since the amount appropriated has not as yet been released to the Department of Education.

APPENDIX B

TRAINING OF VARIOUS GRADES OF INDUSTRIAL WORKERS

1. *The unskilled workers*—In all industrial production, the unskilled worker plays a vital role which made possible even to the poor to enjoy the use of modern conveniences. The principal function of this type of worker is the performance of the manual work requiring neither a high-degree skill nor a technical knowledge. To meet the desired occupational standards, the worker should develop endurance, manual dexterity, and some degree of judgment. The work that the unskilled worker performs is variable with industrial condition and, in all cases, it is so simple and so perfectly standardized that he needs merely to be told to perform it. Even under such a condition still this type of worker needs some form of training so that to "break him in" on the job will not be difficult. The worker who has had some training for entrance into the occupation, however, little as it may be, will always find it easier to adjust himself to his work and he can perform it in some better way than one without training. This means the saving of time, energy, and materials.

2. *The semi-skilled worker*—The greatest portion of the work done in any manufacturing concern rests on the semi-skilled workers. The type of work performed by this particular group of factory or industrial workers requires some degree of technical knowledge and specialized skills because these workers are generally assigned to operate machines requiring some technical knowledge and skills. The training of this group, like the unskilled workers, will be the main function of the provincial trade schools. The training given to these workers need not be extended. All that is needed is short period of orientation right in the plant to break them in on the job. This breaking-in of the semi-skilled workers could be done easily by placing them next or near the experienced workers.

3. *The skilled mechanic and foreman*—With the use of precision and modern complicated machines, the skilled mechanics will need more skills and technical knowledge than ever before. Precision and comcomplicated machines like the ones now used in modern mass production require a high-degree skill and technical knowledge in assembling, repairing, mantaining, and servicing tools and machines which ordinary mechanics cannot do. Efficiency of production will depend in no small degree upon the skills of the mechanics maintaining the machines in the indus-

trial establishment. A goodly portion of INDUSTRY'S capital investment will no doubt be invested in capital goods, such as production machines, power plants, and the like. To maintain such machines for continuous production will require the services of expert or skilled mechanics. Side by side with the mechanics who will maintain the machines, there are other types of skilled workers whose work is just as important as the service machines. These are the tool-makers who will take care of producing accurately the desired tool bits and cutters by means of which the machines can perform their work to produce the desired commodities. The work of this type of workers requires also a high-degree skill and careful training like the maintenance and service mechanics. The training of the skilled mechanics will be done conveniently in both provincial trade and national arts and trades schools which are proposed to be equipped to meet such need.

4. *The technical worker*—Next to the engineers are the technicians who assist in planning and executing the plans of fabricating the desired goods. Modern INDUSTRY employs a large number of this type of workers. In the United States, where the INDUSTRY has already reached its point of production efficiency, an average of 521 [1] technicians per engineer are employed.

The training of this group of industrial workers will be undertaken in the national schools of arts and trades which are offering technical courses on the junior-college-technical level. These schools are situated at Iloilo, Cebu and Manila.

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[1] Brownwell, William A. et al. *Measurement of Understanding*, p. 282. Chicago, Chicago University Press. 1946.

APPENDIX C

PROPOSED ENABLING LEGISLATION FOR THE PHILIPPINE SCHOOL OF ARTS AND TRADES

First Congress of the Republic
of the Philippines
Session

HOUSE OF REPRESENTATIVES

H. Bill No. ......

Introduced by Congressman ....

EXPLANATORY NOTE

Our program of vocational education, particularly in the field of trades and industries, cannot be carried out effectively and efficiently unless we have teachers who are professionally and technically trained. It is not amiss to mention, in this connection, the fact that only approximately 17 per cent of the present teachers of elementary industrial arts and trade teachers in the secondary schools are technically and professionally prepared. The Philippine Congress has always been staunch in its support of vocational education, but it has never made any direct commitment on the training of trade and industrial teachers for the secondary schools. Trade and industrial courses have been prescribed and offered in our trade schools, agricultural schools, and general high schools, but no provisions have as yet been made for the professional training of the teachers for these courses.

Therefore, the authorization, proposed to be given to the Philippine School of Arts and Trades to extend its present teacher of arts and trades curriculum to two more years and to confer the degree of Bachelor of Science in Industrial Education to students finishing the four-year course is imperative and urgent. It may be noted that there is no school in this country which is offering this course, or plans to offer it in the near future.

The Philippine School of Arts and Trades is the only school in the Philippines so far, with the possible exception of the Cebu and Iloilo Schools of Arts and Trades, that offer the teacher of arts and trades curriculum. This curricuulum is only for the elementary grades. In view of its present facilities, its central location, and the present set-up of its faculty, it is believed that the Philippine School of Arts and Trades is the best school to which should be given the authority to offer the four-year course in teachers of arts and trades and, along with it, the authority to confer the degree of Bachelor of Science in Industrial Education.

In view of all these, it is believed incumbent upon this august body to approve this bill to remedy the pressing demand for trained teachers in arts and trades for the secondary and technical schools offering vocational trade courses.

In estimating the cost of operating and maintaining the Department of Industrial Education of the Philippine School of Arts and Trades, the schedule of salaries indicated below for the members of the faculty has been adopted:

SCHEDULE OF SALARIES

	A	B	C	D
Superintendent — Dean	₱5,100.00	₱5,400.00	₱5,700.00	₱6,000.00
Asst. Superintendent	4,800.00	5,100.00	5,400.00	5,700.00
Professors	4,800.00	5,100.00	5,400.00	5,700.00
Associate Professors	3,600.00	4,800.00	5,100.00	5,400.00
Instructors	2,400.00	2,700.00	3,000.00	3,300.00

On the basis of the above schedule and the other necessary outlay for the operation and maintenance of this department, an itemized statement of the proposed budget for the fiscal year 1950-51 is as follows:

I. SALARIES AND WAGES

1 Superintendent — Dean (x)	
1 Asst. Superintendent (x)	
1 Registrar (x)	
1 Chief Clerk — Disbursing Officer (x)	
4 Clerks at ₱1,800.00 each	₱7,200.00
1 Stenographer at ₱2,400.00	2,400.00
2 Tool Clerks at ₱1,560.00 each	3,120.00
1 Medical Officer (with rank of Asst. Professor) at ₱3,720.00	3,720.00
1 School Nurse at ₱2,400.00	2,400.00

(x) Salaries for Superintendent — Dean, Assistant Superintendent and others not included are provided for in the regular budget and the share of the school from the ₱500,000.00 appropriation under Republic Act No. 415.

1	School Dentist (with rank of Asst. Professor) at ₱3,600.00	2,400.00
2	Messengers at ₱1,200.00 each	2,400.00
1	Gardener at ₱1,440.00	1,440.00
3	Janitors at ₱1,320.00 each	3,960.00
5	Asst. Professors at ₱3,960.00 each	19,800.00
4	Asst. Professors at ₱3,600.00 each	14,400.00
10	Instructors of technical courses at ₱3,300.00 each	9,600.00

Total for salaries and wages .... ₱107,040.00

II. SUNDRY EXPENSES

1.	Contribution to the Government Service Insurance System	3,211.20
2.	Consumption of supplies and materials	4,000.00
3.	Traveling expenses of personnel	1,500.00
4.	Postal, telegraph and telephone service	1,500.00
5.	Illumination and power service	2,000.00
6.	Maintenance & repair of equipment	2,000.00
7.	Parks and Monuments	5,000.00
8.	Other services	3,248.80

Total for Sundry Expenses .... ₱22,460.00

III. FURNITURE AND EQUIPMENT

1.	Shop tools and equipment	₱10,000.00
2.	Industrial machines	27,000.00
3.	Office furniture and equipment	7,000.00
4.	Classroom furniture and equipment	8,000.00

Total for Furniture and Equipment .... ₱52,000.00

IV. SPECIAL PURPOSES

1.	Library books	₱ 3,000.00
2.	Library equipment for experimentation and research	5,500.00
3.	Fellowships	10,000.00
4.	Buildings-Construction of additional classrooms	200,000.00

Total for Special Purposes .... ₱218,500.00

SUMMARY

Total for salaries and wages	₱107,040.00
Total for sundry expenses	22,460.00
Total for furniture and equipment	52,000.00
Total for special purposes	218,500.00
GRAND TOTAL	₱400,000.00

First Congress of the Republic
of the Philippines
Session

HOUSE OF REPRESENTATIVES

H. Bill No.————

Introduced by Congressman——————————

AN ACT

AUTHORIZING THE DIRECTOR OF PUBLIC SCHOOLS, SUBJECT TO THE APPROVAL OF THE SECRETARY OF EDUCATION, TO CONVERT THE PRESENT TEACHERS OF ARTS AND TRADES CURRICULUM OF THE PHILIPPINE SCHOOL OF ARTS AND TRADES INTO A FOUR-YEAR COLLEGIATE CURRICULUM FOR THE PURPOSE OF ENABLING THIS SCHOOL TO CONFER THE DEGREE OF BACHELOR OF SCIENCE IN INDUSTRIAL EDUCATION; PROVIDING FUNDS FOR THE SAME; AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the Philippines in Congress Assembled:

SECTION 1. The Director of Public Schools, subject to the approval of the Secretary of Education, is hereby authorized to create in the Philippine School of Arts and Trades located in the City of Manila, Philippines, a Department of Industrial Education, converting the present teachers of arts and trades curriculum into a full collegiate curriculum for the purpose of offering a four-year course leading to the Degree of Bachelor of Science in Industrial Education.

SECTION 2. The purpose of this Department of Industrial Education shall be to provide professional, technical, and special training for the preparation of teachers, supervisors, and administrators in the field of Industrial Arts and Trades and Industrial Education.

SECTION 3. The Superintendent of the Philippine School of Arts and Trades shall, in addition to his present duties, be ex-Officio Dean of said Department of Industrial Education.

SECTION 4. Upon the recommendation of the Dean of the Department of Industrial Education, the Director of Public Schools subject to the approval of the Secretary of Education, shall fix and charge the tuition fees required of students as well as the matriculation fees, graduation fees, and fees for shop courses and all special fees. The moneys shall be held in trust and shall be spent exclusively for the operation and maintenance of the Department of Industrial Education.

SECTION 5. Upon recommendation of the Dean of the Department of Industrial Education, the Director of Public Schools, with the approval of the Secretary of Education, shall prescribe rules and regulations with reference to the qualification and compensation of instructors and professors in the said Department provided that, in the case of technical positions, civil service examinations and regulations as a prerequisite to employment and for the determination of the range of salaries may be waived.

SECTION 6. To augment the allotment of the P.S.A.T. from the appropriation under Republic Act No. 415 and for carrying out the purposes and provisions of this Act, the sum of ₱400,000.00 is hereby appropriated from any fund in the National Treasury not otherwise appropriated and thereafter the said amount be included in the General Appropriation Act.

SECTION 7. All laws and regulation or parts therefor contrary to the provisions of this Act are hereby amended.

SECTION 8. This Act will take effect on its approval.

APPROVED, , 1940

APPENDIX D

NATIONAL ADVISORY BOARD ON VOCATIONAL EDUCATION

MALACAÑAN PALACE
Manila

BY THE PRESIDENT OF THE PHILIPPINES
EXECUTIVE ORDER NO.————

CREATING A NATIONAL ADVISORY BOARD ON VOCATIONAL EDUCATION

WHEREAS, the national program of mechanized agriculture and industrialization cannot be carried out effectively without sufficient skilled labor and technical know-how;

WHEREAS, the vocational schools, public and private, aim to give to the youth (in-school and out-of-school) and adults occupational training which will fit them for entrance into the occupations and for places in the national industrialization program;

WHEREAS, it is essential that the training courses offered in the vocational schools be such as will give specific vocational efficiency; that the equipment and facilities of such schools be adequate to meet the requirements of practical training; and that the projects and other means of instruction be suitable to commercial needs with respect to kind, quality of workmanship, methods of production, and materials; and

WHEREAS, it is advisable that there be consultation among representatives of agriculture, business and industry, both private and government, with a view to formulating suggestions and recommendations regarding the selection of the needed technical know-how and the training and employment of skilled workers which may serve as a basis of the vocational education program.

NOW, THEREFORE, I, ELPIDIO QUIRINO, President of the Philippines, by virtue of the powers vested in me by the Constitution of the Philippines, do hereby order that a National Advisory board on Vocational Education be created to advise the Secretary of Education on matters pertaining to the selection, training, placement, and progress of workers needed in agriculture, in industry and in business. The members of the Board shall be composed of one representative from the Department of

Agriculture and Natural Resources, one representative from the Department of Labor, and one representative from the Department of Commerce and Industry, each to be recommended by the Department Secretary concerned, and three private citizens eminent in industry, agriculture, and business to be appointed by the President of the Philippines for a term of four years upon the recommendation of the Secretary of Education.

The Secretary of Education, the Director of Public Schools, and the Director of Private Schools shall be ex-officio members of the Board, and the Chief of the Vocational Education Division of the Bureau of Public Schools shall be its permanent Executive-Secretary. The members of the Board shall elect their chairman each year and shall meet once a month or oftener.

The members of the Board shall receive no compensation for their services therein. They shall formulate additional rules and regulations to carry out the objectives for which the Board has been created.

Done in the City of Manila, this —— day of ——————, in the year of our Lord nineteen hundred and forty-nine and of the Independence of the Philippines, the fourth.

ELPIDIO QUIRINO
President of the Philippines

By the President:

TEODORO EVANGELISTA
Executive Secretary

APPENDIX E

PROPOSED ORGANIZATION OF THE OFFICE OF VOCATIONAL EDUCATION DIRECTLY UNDER THHE DEPARTMENT OF EDUCATION

Items	Proposed	Present	Amount Needed
Office of the Director			
1. One director	₱ 7,200.00	₱	₱ 7,200.00
2. One clerk-stenographer	2,400.00	1,320.00	1,080.00
Administrative Division			
3. One administrative officer	5,400.00	4,200.00	1,200.00
4. Two superintendents at large at ₱4,800	9,600.00	8,700.00	900.00
5. One record clerk	2,400.00	——	2,400.00
6. One stenographer	1,800.00	——	1,800.00
7. One helper	1,200.00	1,140.00	60.00
8. One messenger	1,200.00	——	1,200.00
Total	₱31,200.00	₱15,360.00	₱15,840.00
Agricultural Education Division			
9. One chief	₱ 5,400.00	₱ 4,200.00	₱ 1,200.00
10. Four supervisors at ₱3,300	13,200.00	9,360.00	3,840.00
11. One supervisor (trade courses for girls)	3,300.00	3,300.00	——
12. One supervisor (teacher-training in agricultural instruction)	3,120.00	——	3,120.00
13. One stenographer	1,800.00	——	1,800.00
14. Two clerks at ₱1,440.00	2,880.00	2,580.00	300.00
15. Two helpers at ₱1,200.00	2,400.00	1,140.00	1,260.00
Total	₱32,100.00	₱20,580.00	₱11,520.00
Trade and Industrial Education Division			
16. One chief	₱ 5,400.00	₱ 4,200.00	₱ 1,200.00
17. One supervisor	3,480.00	3,480.00	——

Items	Proposed	Present	Amount Needed
18. Three supervisors at ₱3,300	9,900.00	9,360.00	540.00
19. One supervisor (teacher-training in trade and industrial education)	3,120.00	——	3,120.00
20. One supervisor (trade courses for girls)	3,120.00	3,120.00	——
21. One designer-draftsman	2,400.00	1,320.00	1,080.00
22. One draftsman	1,800.00	1,440.00	360.00
23. One stenographer	1,800.00	——	1,800.00
24. Two helpers at ₱1,440.00	2,880.00	1,440.00	1,440.00
25. Two helpers at ₱1,200.00	2,400.00	2,280.00	120.00
Total	₱36,300.00	₱26,640.00	₱ 9,660.00
Craftsman Section			
— Under separate itemized budget covered by Republic Act 414	₱150,000.00	——	₱150,000.00[1]
Business and Distributive Education Section			
26. One chief	4,200.00	——	4,200.00
27. Two supervisors at ₱3,120.00	6,240.00	——	6,240.00
28. One clerk	1,440.00	——	1,440.00
Total	₱11,880.00	——	₱11,880.00
Research and Measurement Division			
29. One chief	₱ 4,500.00	——	₱ 4,500.00
30. Two research-analyst at ₱3,120.00	6,240.00	——	6,240.00
31. Two statisticians at ₱2,400.00	4,800.00	——	4,800.00
32. One librarian	2,400.00	——	2,400.00
33. One clerk-stenographer	1,800.00	——	1,800.00
Total	₱19,740.00	——	₱19,740.00
Guidance and Placement Division			
34. One chief	₱ 4,800.00	——	₱ 4,800.00

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[1] This amount is not included in the total sum.

Items	Proposed	Present	Amount Needed
35. One coordinator	3,120.00	—	3,120.00
36. Two supervisors (extension training) at ₱3,120.00	6,240.00	—	6,240.00
37. One clerk-stenographer	1,800.00	—	1,800.00
38. One clerk	1,440.00	—	1,440.00
Total	₱17,400.00	—	₱17,400.00
Finance and Property Division			
39. One chief	₱ 4,500.00	—	₱ 4,500.00
40. One cashier and disbursing officer	3,720.00	—	3,720.00
41. One budget officer	2,760.00	—	2,760.00
42. One property and requisition officer	2,760.00	—	2,760.00
43. One clerk-stenographer	1,800.00	—	1,800.00
44. Two clerks at ₱1,440.00	2,880.00	—	2,880.00
45. Five helpers at ₱1,200.00	6,000.00	—	6,000.00
Total	₱24,420.00	—	₱24,420.00
GRAND TOTAL	₱173,040.00	₱62,580.00	₱110,460.00